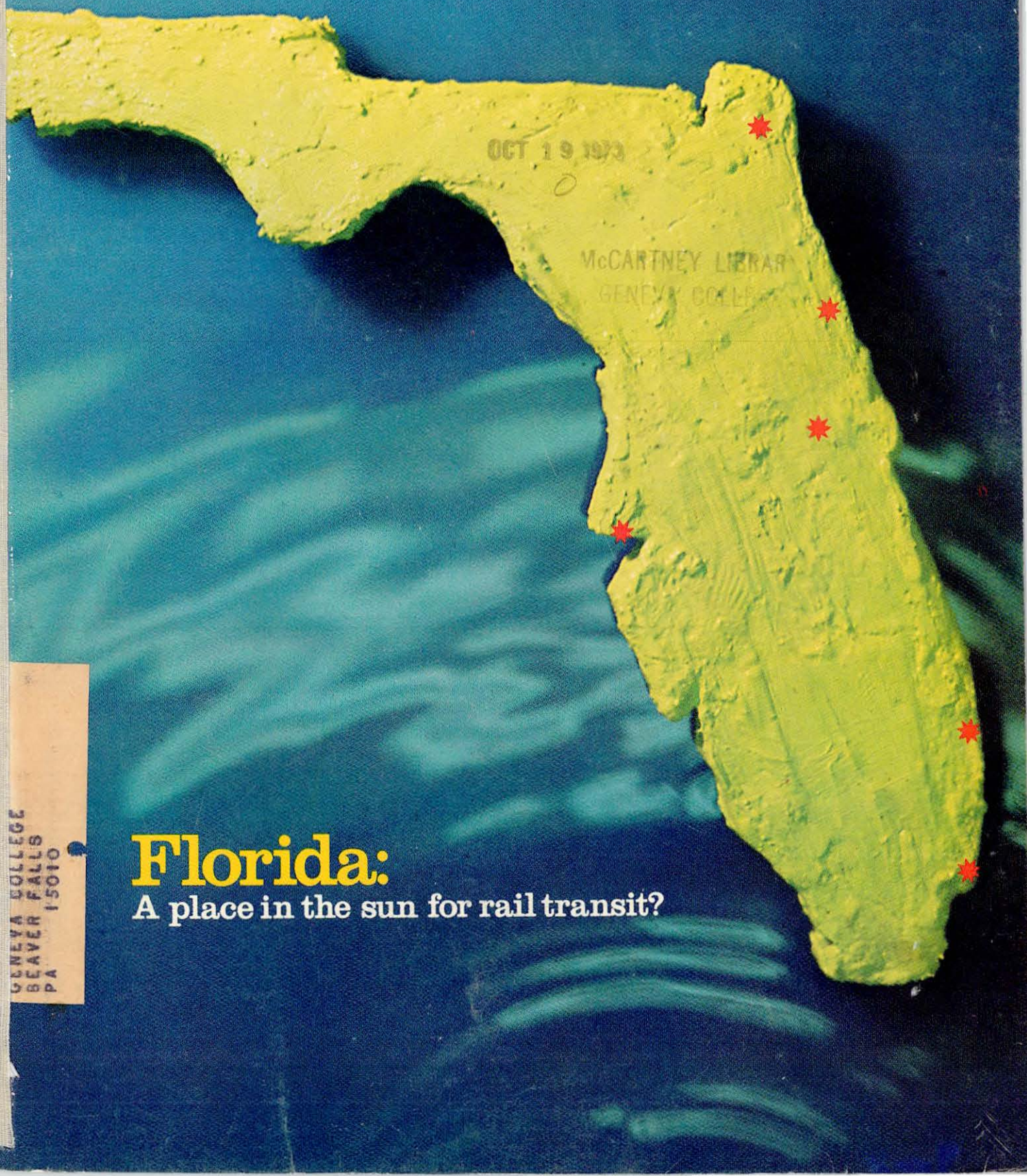
The new Highway Bill:
An opening wedge

October 8, 1973

RAILWAY AGE



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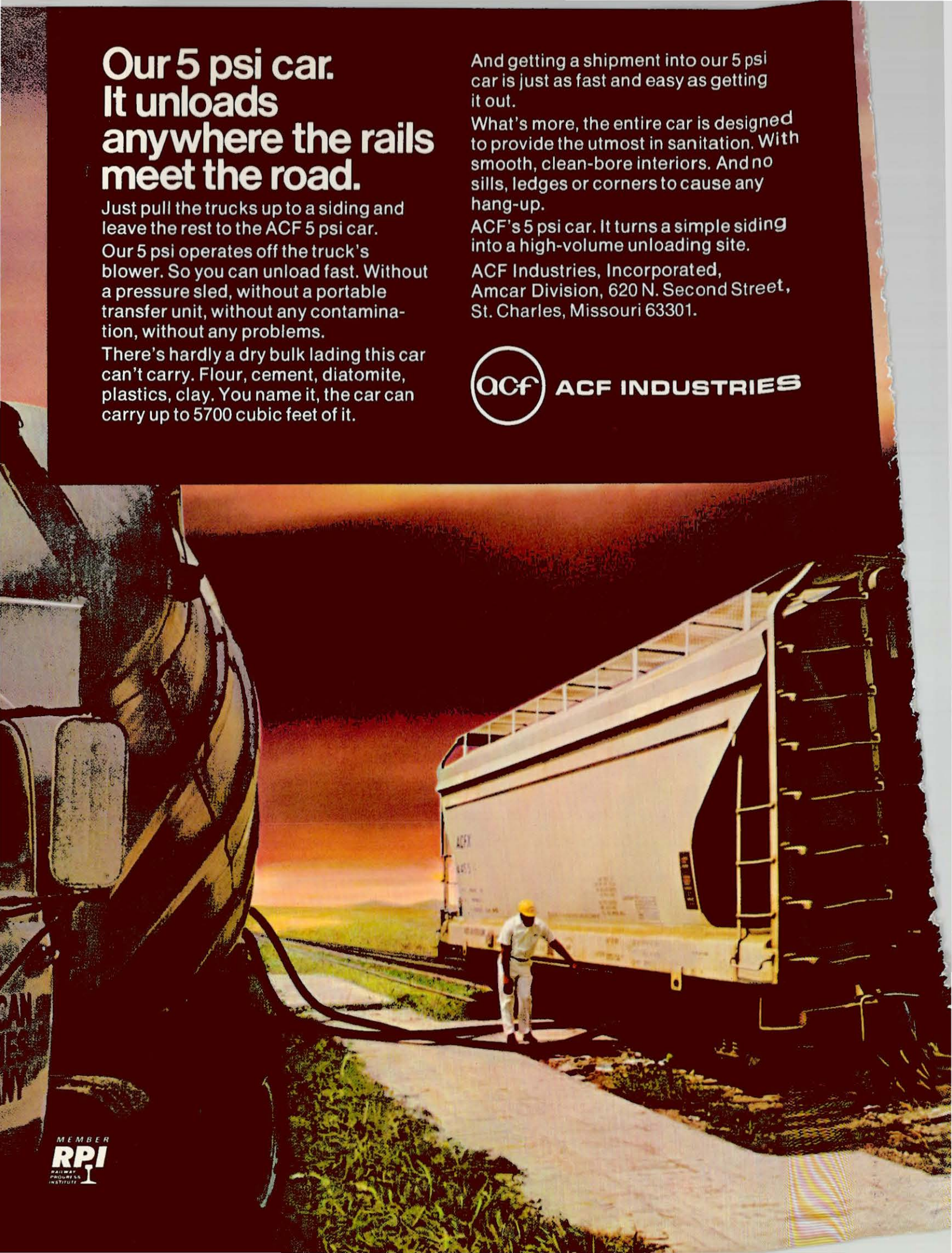

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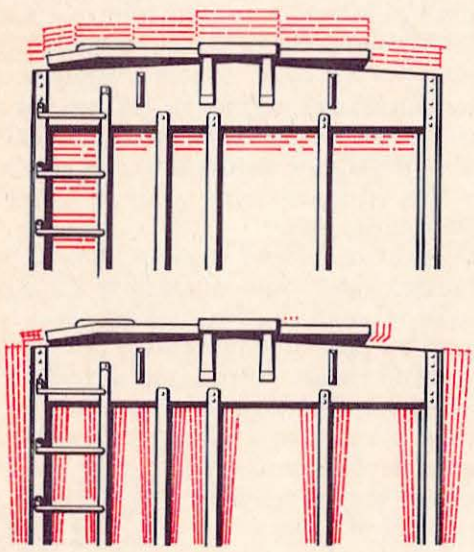

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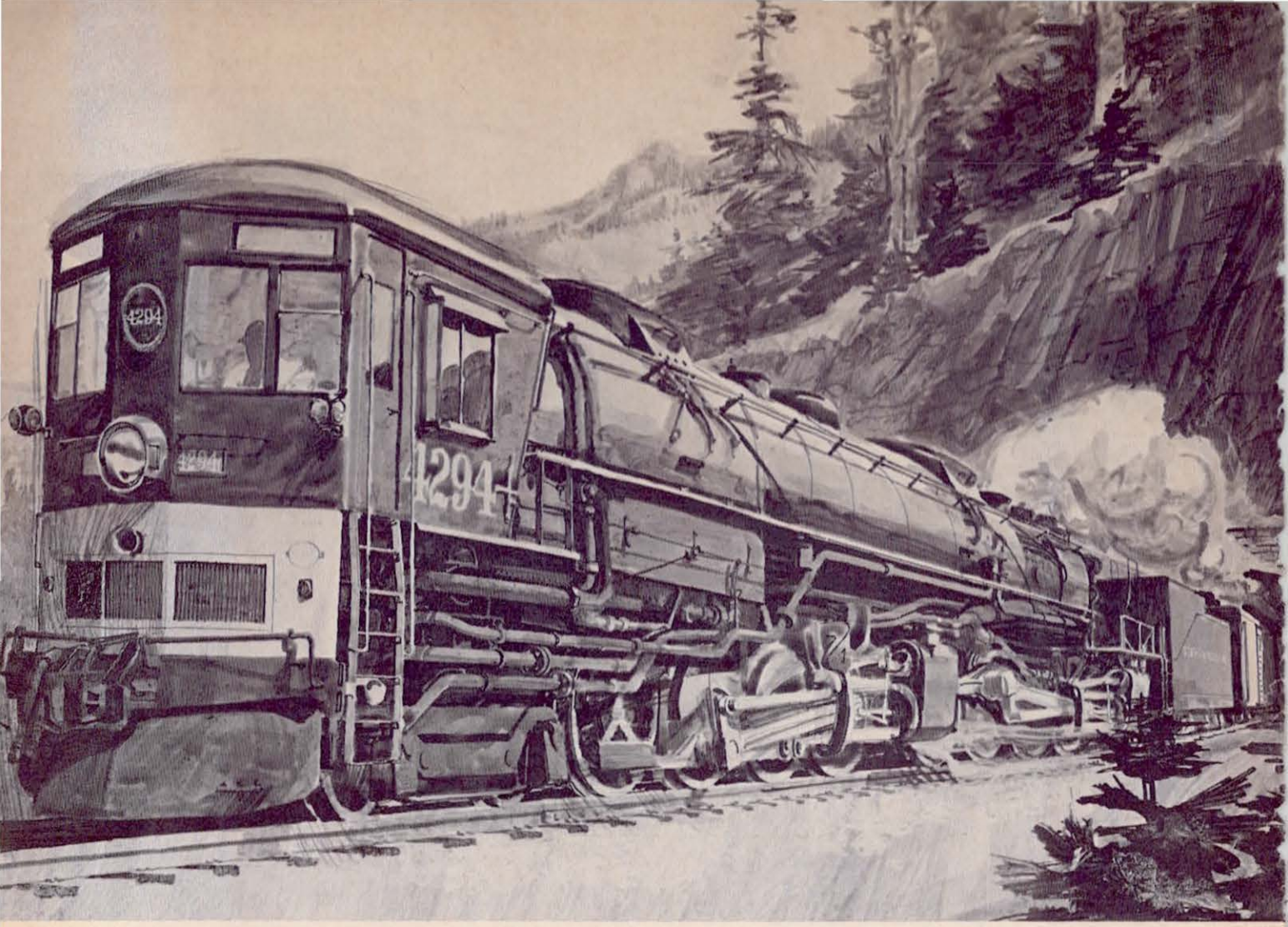

Remember this big Articulated?

She looked like two steam engines running under one boiler, and with tender she was 125 feet long. To get her around curves, they had to pivot the boiler. So they gave her a jaw-breaker name: the cab-ahead Articulated Consolidation locomotive.

With over a half million pounds of weight on the drivers and 124,300 pounds of traction, she was a mighty challenge to the peaks and snows of the high Sierras. But No. 4294, shown hogging heavy freight from Oakland to Ogden in '44, was the last steam engine ever bought by the Southern Pacific.

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RAILWAY AGE

October 8, 1973 • Vol. 174 No. 19

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Inside

LUTHER MILLER

MR. BRINEGAR'S DOZEN

"We have concentrated for decades on projects for connecting our urban centers with highways and airways. . .We have spent billions on getting people and goods from city to city. But moving around within our cities and suburbs? Quite clearly, this question got lost somewhere. . ."

This is not a mass-transit lobbyist speaking. It is DOT Secretary Claude S. Brinegar, who despite his oil-company background (or perhaps because of it: who knows better than a man who has been there?) has emerged as a true believer in a mass-transit alternative. Mr. Brinegar demonstrated that by vigorously supporting the successful drive to open up the Highway Trust Fund to mass transit (p. 34). Presumably, he is pleased with the veritable explosion of mass-transit planning that is taking place around the nation, notably and most recently in Florida (p. 28).

But we are bound to take issue with the Secretary when he says, as he did recently:

"I think it's worth noting that while most people think 'subways' when they hear the term 'mass transit,' it's my personal guess that subways, because of their very high capital costs, should be limited to the dozen or so really large cities. In most cities, I see increasing usage of specialized, high-quality bus service for commuters. . . .I also see, in time, cities fitting various kinds of automated 'people-movers' into their downtown areas."

HOW ABOUT BOSTON? ATLANTA? BUFFALO?

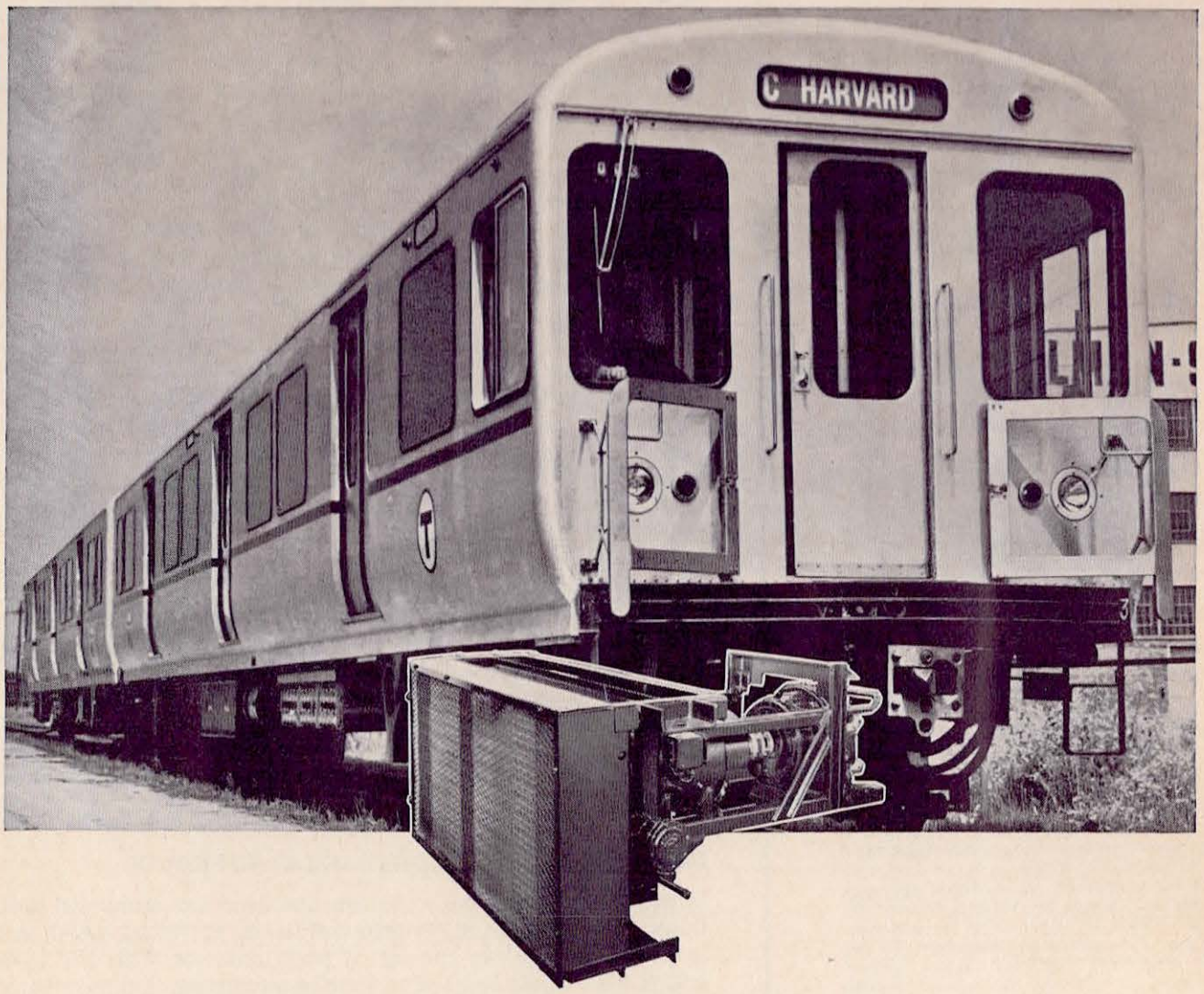
Without quarreling with the obvious need for more and better buses—especially as short-term solutions for cities which must quickly try to clean the air of pollutants—or with the future which PRT doubtless has in limited situations, it is nevertheless necessary to hoist an eyebrow over the Brinegar-dozen of cities qualifying for "subways" (by which the Secretary doubtless meant, in light of his subsequent remarks, rail rapid transit).

It is noteworthy that Boston, which has America's oldest subway, would not qualify today under Mr. Brinegar's rule of thumb. Nor would San Francisco (No. 13), or Atlanta (No. 27), or Buffalo (No. 28), all of which have or are building rapid rail systems.

Before other "smaller" cities become discouraged and call in the concrete mixers, they might want to find out why Oslo (pop. 488,000) or Rotterdam (686,000) or Frankfurt (661,000) or dozens of other cities around the world in the middle-size category are taking the rail route. These cities face the same high capital costs that are a source of worry to Mr. Brinegar. But they concluded that the long-term economic and social benefits were worth the short-term investment.

More than 100 cities outside the U.S. are building, extending or planning fixed-guideway transit systems. Maybe we're smarter than the rest of the world. And then again, maybe not.

"Safety" air conditioning: the system of the 70's



All 76 of the new 70-mile-per-hour MBTA cars have a "Safety" 12-ton component type air conditioning system. It consists of two 6-ton evaporator and blower assemblies, a combination air cooled condenser-compressor unit, and a motor control panel. The system is arranged for operation at nominal 600 volt DC power supply and 32 volt DC control voltages. "Safety" Control Panels are compact, simplified. They start the compressor motor and they keep it running efficiently . . . and dependably!

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RAILWAY AGE

OCTOBER 8, 1973

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Short and Significant

CARBUILDER BACKLOG CONTINUES TO CLIMB

Carbuilders got all the orders for 5,461 new freight cars placed during August 1973. The backlog of 43,705 new cars in commercial shops on Sept. 1, 1973, was the highest since late in 1966. Meanwhile, the railroad-shop backlog began to decline, dropping 249 cars during August to 2,659 on Sept. 1, 1973. The total of new cars ordered through eight months of 1973 reached 63,380. The 12-month totals for each of the preceding three years had averaged only 50,025.

INDEPENDENT SAFETY AGENCY PROPOSED

Rep. Brock Adams (D.-Wash.), chairman of the House Transportation Subcommittee, introduced a bill Sept. 25 to create a new and independent National Agency for Transportation Safety to take over the work now done by the DOT's National Transportation Safety Board. Adams said the NTSB "is on a budgetary leash held by the Office of Management and Budget and has been pressured by the Administration to modify its tough suggestions." He noted that the board itself has asked in its last two annual reports that it be given independent status.

SOUTHERN PLANS NEW TRAINING CENTER

A $1-million employee-training center will be built by Southern on an 18-acre site near McDonough, Ga. R.D. Hedberg, assistant vice president-personnel administration, said four of Southern's primary training programs—for locomotive engineers, shop-crafts, communications and signal department employees, and technical instruction for management trainees—will initially be consolidated at the center. There will be 12 to 15 full-time instructors and, at any given time, between 50 and 60 students. Classrooms will be equipped with audio-visual facilities, including closed circuit and cassette television, film projectors and tape recorders.

MILWAUKEE EXPANDS IN LOUISVILLE

Milwaukee Road extended its operations across the Ohio River to Louisville last March—and now, Milwaukee has its TOFC/COFC terminal in service, adjacent to the Kentucky & Indiana Terminal and close to four Interstate highways. The five-acre-plus facility will be operated by Milwaukee Motor Transportation Co.

NORTH AMERICAN LOOKS SOUTH

North American Car has acquired California Tank Car Line, Inc., and its Mexican subsidiary, California Tank Car Line de Mexico, S.A., in what NAC President Thomas F. Grojean calls "an extension of the company's rail equipment leasing and financing services to include major chemical, petroleum and food-processing industries throughout Mexico." California Tank Car leases nearly 1,000 tank cars to about 50 customers in Mexico.

UP GIVES SERVICE A BOOST

Operations on Union Pacific's high-density westbound mainline in Nebraska, Colorado and Wyoming will get a speed-up as a result of a $1-million track-construction program involving the building of a new sidetrack at Owasco, Neb., and the lengthening of tracks at six other points. The new and stretched sidetracks will all be capable of handling trains of more than 180 cars.

PC's AUGUST LOSS UP SHARPLY

Declining traffic and rising costs added up to new trouble for the already trouble-laden Penn Central in August. Carloadings were down 3.5% from August a year ago, due partly to the Canadian rail strikes which cost PC 4,000 carloads of freight. Revenues, thanks to rate increases, rose 3%—but operating expenses rose 7.6%, reflecting higher wage rates and material costs. PC's August loss, on a fully accrued basis, was $18,133,984, compared to a net loss of $10,349,686 in August 1972. The carrier's net loss for the first eight months of 1973 was $123,549,830, compared to $164,965,323 for the corresponding 1972 period.

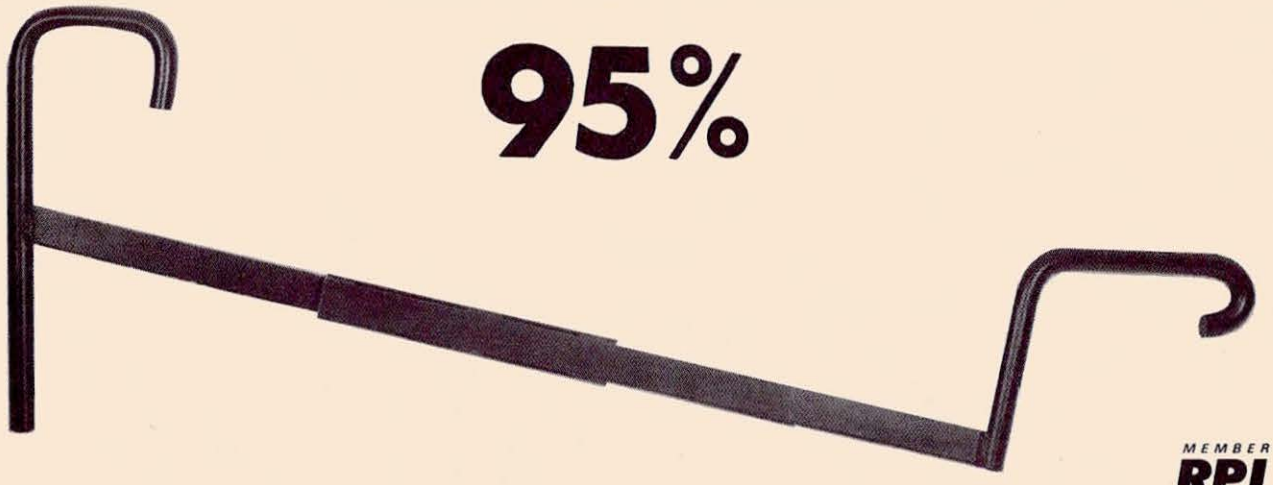
ENVIRONMENTAL CONCERN: IT COSTS MONEY

Illinois Central Gulf has just completed construction of wastewater collection-and-treatment facilities at two more locations, Baton Rouge, La., and Central City, Ky. The cost: $635,000. These are the sixth and seventh such facilities built by ICG, adding up to a current investment of about $2.1 million—with 24 more installations yet to go.

"CHUNNEL" WINS FINAL APPROVAL

The British government has now joined France in giving final approval to construction of a 32-mile, $2-billion, twin-tube railroad tunnel across the English Channel. First proposed 222 years ago, the "Chunnel" was long opposed by those who feared it would create an easy invasion route. Recent opposition has come from shipping and highway interests. In its white paper approving the tunnel, the government cited relief from highway congestion and pollution, plus closer economic and social ties between the British Isles and Continental Europe. Target date for completion is 1980.

Holland's new "ECON" cuts uncoupling lever inventory as much as 95%



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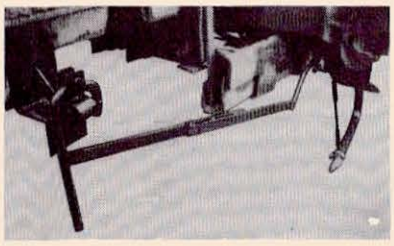
Fits Any Standard Draft Gear Car (except those with rotary couplers)

There are 150-200 different uncoupling levers for draft gear cars ranging from brand name models to Rube Goldberg devices.

Holland's ECON will replace all of them. It's a standard item that will slash unwieldly inventories as much as 95%. Not to mention the time now wasted waiting for an item that all too often has to be custom made.

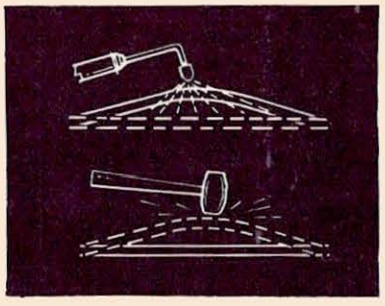


Easy, Safe, Quick Installation

The ECON can be installed in 30 seconds *while the cars are coupled and knuckle is closed.* This can be done without crossing a track, a vital safety factor. The coupler never has to be dis-assembled.

By-Passed Coupler Damage

Because of the unique design and low position of the ECON, passed coupler damage, a chronic problem with conventional uncoupling levers, has been virtually eliminated.



Flat Bar Construction Means Fast, Economical Repairs

Since the ECON is constructed basically of two tough, flat steel bars, repairs can easily be made in the field.

If one of its two parts is damaged, you don't have to buy a whole new unit. Holland will sell you just the part you need.

A Winner Every Way

Holland's ECON has been put on every type of draft gear car, *including piggyback equipment.* Performance has been excellent.

Above all, the ECON is a money saver. It will cut installation, repair and replacement costs. It will perform major surgery on those big uncoupling lever inventories that tie up precious capital.

It will eventually make the "custom" uncoupling lever obsolete.

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RAILWAY AGE
NEWS

Tomorrow's power: Will it be electric?

Not many railroads have studied electrification quite so extensively as CP Rail—and CP's assessment of where it stands is perhaps as good a measure as any of the problems involved in trying to determine which way to go with future motive power. "We've been studying electrification now for almost five years," says Senior Executive Officer Keith Campbell, "and we have reached no conclusion except perhaps that no general conclusion is possible."

For one thing, he notes, there is no real alternative "to the painstaking analysis of the problems of application to each section of line." For another, it is essential that comparisons be made between the best in electrification technology and "what could be achieved by a comparable effort applied to diesel power." Finally, any road studying electrification also has to ask "what other forms of motive power may become available within the 30-to-40-year life of a new fleet of electric locomotives."

● **Why—and why not?** Campbell, leading off a Railway Systems and Management Association seminar on electrification, ticked off a list of reasons for the current high level of interest in electrification—and one big reason why, thus far, interest has not been translated into action:

—"There is a question mark concerning further development of the diesel locomotive. . .In hauling fast freights, the needs of the market dictate that to maintain competitive schedules we should use four, five or even six locomotives of 3,000 hp or more. Where bulk freight is concerned, the need to minimize unit costs has led many railroads to operate very long trains sometimes requiring as many as 12 such locomotives. There is nothing inherently wrong in this—yet somehow, such an inelegant solution suggests that we may have reached a technical plateau from which some new technical departure is overdue." However, Campbell added, "efforts to increase locomotive output by using more than one low-speed engine per locomotive have not been sufficiently successful to obtain widespread acceptance. No more successful have been experiments in using high-speed diesel engines of the type often employed in continental Europe. The way ahead for the diesel locomotive is not readily apparent, and the demand to generate more and more horsepower from it seems to have resulted in high maintenance cost and a level of dependability that some of us. . .would no doubt call to question."

—Perhaps even more important, there is the question of fuel: "As diesel locomotive operators, we are the prisoners of a single fuel, a fuel that is fast becoming a pawn on the chessboard of international politics. It is a fuel, too, for which many users—truckers, for example—have no alternative at the present state of technology. One does not need sophisticated techniques for predicting the future to form the view that, whatever else happens, its price is bound to rise. And I fear that the problem of scarcity is not the kind of problem that goes away if you ignore it. In the generation of electricity, by contrast, almost any fuel may be used. . .[But] powerful as this may be as an argument in favor of electrification, it's well to remember that it is far from certain that the railways would be able to enjoy for themselves all the economic benefit from using electric power generated with the least costly fuel. One thing is certain: In the absence of price control, escalation in the cost of diesel oil will lead to escalation in the cost of electricity."

CP RAIL's CAMPBELL: After five years of study, CP is still asking questions and looking for answers.

—Electrification "has made impressive advances both economically and in technology over the past 20 years. The development of solid-state devices such as silicon rectifiers and thyristors has improved the reliability of the electric locomotive. The increased compactness of the control mechanisms makes it possible to provide greater space for the traction motor than is possible with the diesel locomotive, with all that this implies in terms of improved reliability. The trucks themselves are now capable of transmitting a much higher tractive effort per unit of locomotive weight than is the case with present diesels. Where 50 kv electrification is concerned, much lighter types of catenary have been developed. . .The cost of installation in real terms is now much less than it was even a few years ago."

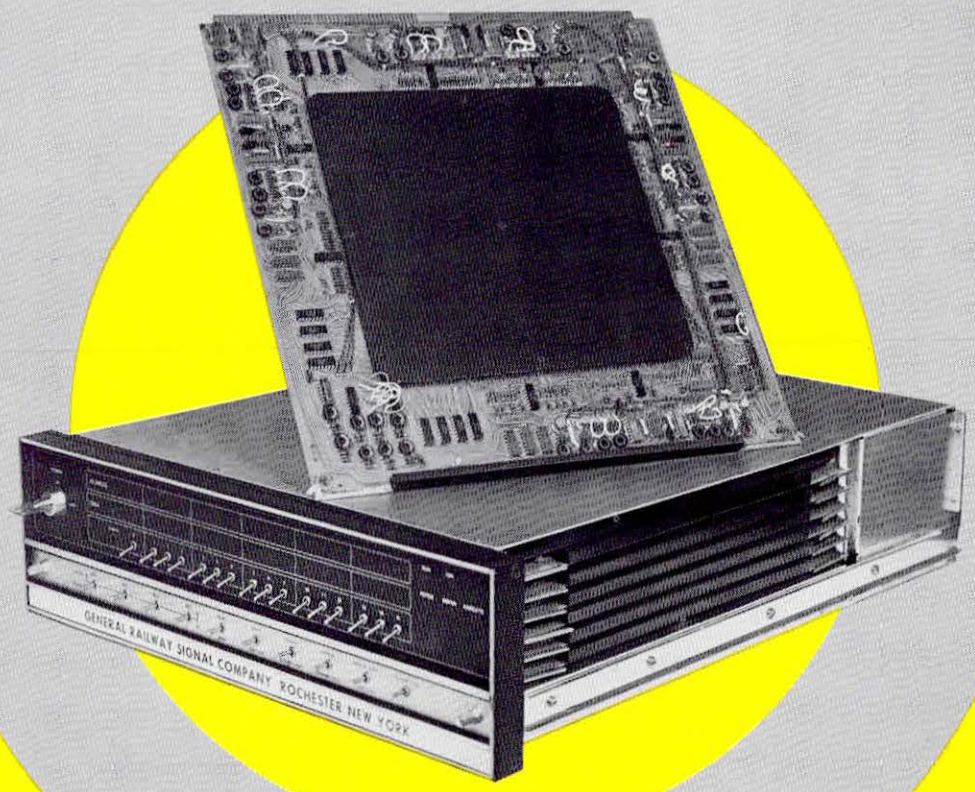
—Finally, "the high and increasing cost of labor for locomotive maintenance adds to the attractiveness of making an investment in fixed equipment and in locomotives which, once made, will require little further capital expenditure over a period of 30 or more years—during which potential escalations in the price of both fuel and diesel-maintenance labor remain unknown but rather frightening factors."

● **A flirtation of oldsters?** With all this in its favor, why has electrification—for the most part—remained an object of study and not of investment? Cost, for one big reason. As Keith Campbell put it, "a cost of perhaps $50,000 per track-mile is a reason that speaks for itself in any investment analysis. I do not suppose that there is any major railroad in North America which could generate funds from internal sources at a sufficient rate to convert itself to electric traction within a decade without substantial injections of external funds. Where would these come from? At the current cost of loan finance, major capital investments with longish payback periods are not popular items in the board room."

Or, to say it another way, "in considering electrification, we are flirting with a lady who has not grown old, although she has had a number of technological facelifts in the process. As an industry, we have also grown old during this century. To withstand and to benefit from a technical revolution would require of us a renewed vigor and vitality."

Tough little eggs... in several baskets

The GRS Distributed Computer System will fit your car classification needs precisely... and you can expand it anytime



Tough Little Eggs:
A basic minicomputer module takes only 10½ inches of height in a standard 19-inch rack. Typically with only five circuit boards (ten at most) it has a mean time to repair of one-half hour—and mean time between failures of thousands of hours.

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A specifically assigned minicomputer handles each major portion of the total control task—one for automatic switching, one for automatic retarder control, one for inventory and reporting, and so on. All, or any parts, of the car classification task can be selectively—or totally—computerized.

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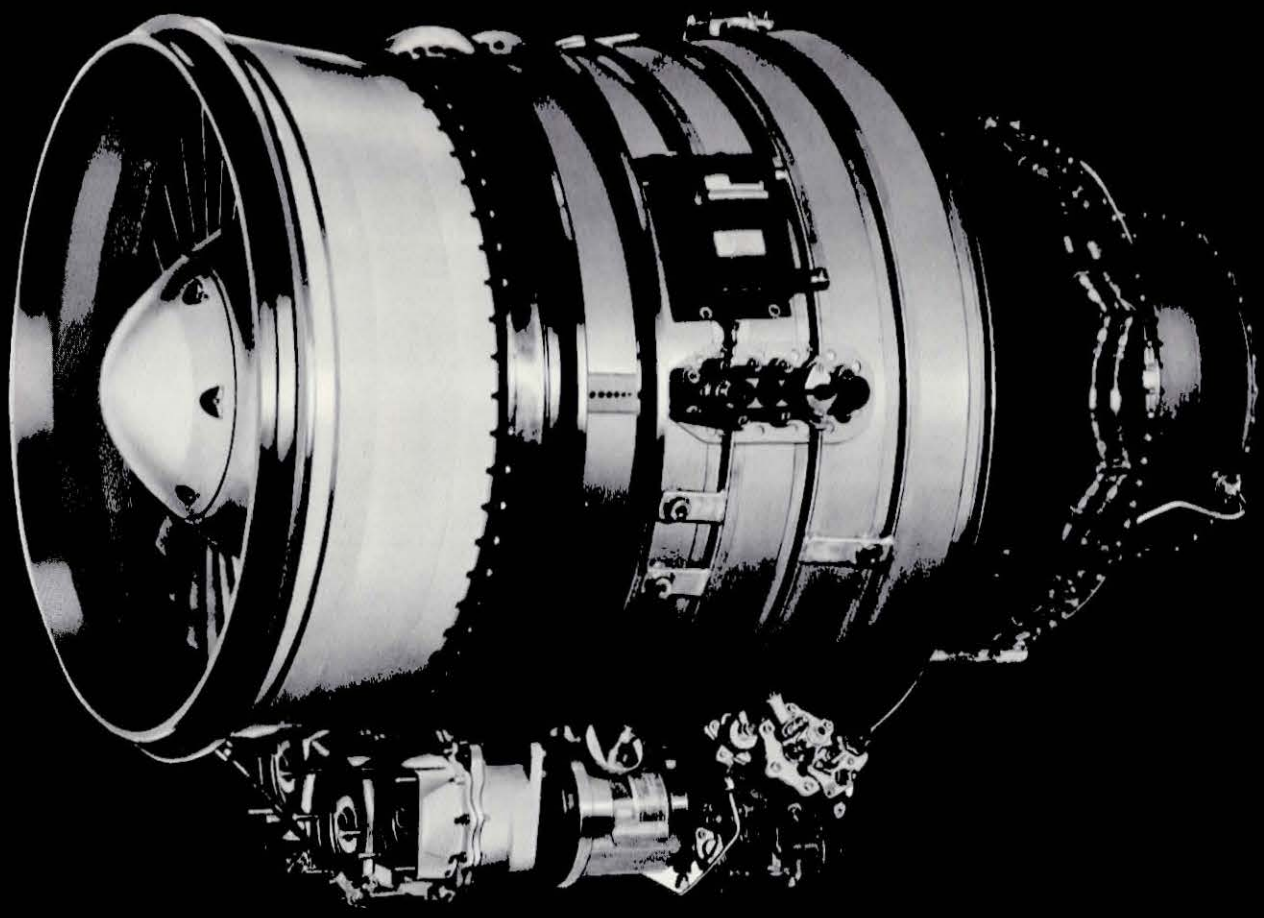
Garrett considers the possibilities



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The age of high-speed rapid transit is right on track with Garrett turbo-mechanical and turbo-electrical propulsion for modern intercity and urban transit systems.

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Garrett turbines. They've logged more than 28 million operating hours, and they're backed by a worldwide product support organization.

So if you're thinking of a small gas turbine engine for any application, consider Garrett. Right from the start.

GARRETT

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Circle 8 on coupon page 61

C&NW, UTU settle crew-size dispute

One of the longest-running disputes between an individual railroad and a major union—the Chicago & North Western/United Transportation Union crew-consist dispute—has been settled in a way that appears finally to recognize the principles of (1) operating with smaller crews, and (2) added compensation for train-service personnel operating under smaller-crew conditions. Settlement was announced by the National Mediation Board, which observed that the number of crew members will be cut "under certain circumstances in such a way that it won't affect the safety of operations or jeopardize the jobs of current employees." NMB Member George Ives added this comment: "This has been a difficult and unresolved problem for over a decade in the railroad industry." And surely nobody could argue with that.

The overall crew-consist dispute dates back to late 1963, and the award of Arbitration Board 282—which provided for elimination of firemen and for locally-arbitrated reductions in the number of train-service personnel required. The board figured that crew size (as opposed to employment of firemen) would be affected by specific conditions, and its decision spawned a series of individual arbitrations all across the country, most of which resulted in the carriers' crew-reduction positions being upheld. At the same time, however, the board also decided that its award should continue in force for just two years—and that provision put the crew-consist dispute before the courts at the close of the specified two-year period.

In the end, through application of strike pressure selectively, the union was able to undo much of what the 282 award had done with respect to train-service crew consists. C&NW, however, continued to hold out.

With the C&NW/UTU settlement, there was immediate speculation—and not much hard fact—as to what it might mean elsewhere, in the industry broadly and in the Northeast, where Penn Central has been locked in a crew-consist dispute with UTU.

In the meantime, the settlement also marked the second time that North Western has gone the individual route to a major settlement. Two years ago, faced with a UTU walkout, C&NW broke away from national handling of a wage rules dispute to work out a separate agreement with the organization—an agreement which was similar in most respects to the one later worked out on a national basis, after a series of UTU selective strikes had been extended to 10 major roads.

Lines on Labor

GUS WELTY

NEW LIGHT ON AN OLD SUBJECT

To sex and politics and religion, add "productivity" on the list of topics that are sure-fire bets to start blazing-hot arguments. This can be true in a lot of industries, but it's especially true in the transportation industry. And, in transportation, it seems to be most true in railroading—for a variety of reasons, many of them historic and few of them any longer very rational. In so many instances, the old-reliable—the ton-mile—is the standard of productivity measurement. Unfortunately, ton-mile just doesn't wash. What it does tend to do is to produce "productivity" changes that aren't all that much related to what has actually been happening—especially in view of technological innovation and changed practices. So, what kind of measures should be used? Perhaps something like those proposed by Southern's Paul H. Banner in an analysis for presentation in conjunction with the Intersociety Conference on Transportation conducted late in September in Denver.

IF NOT THE TON-MILE, THEN WHAT?

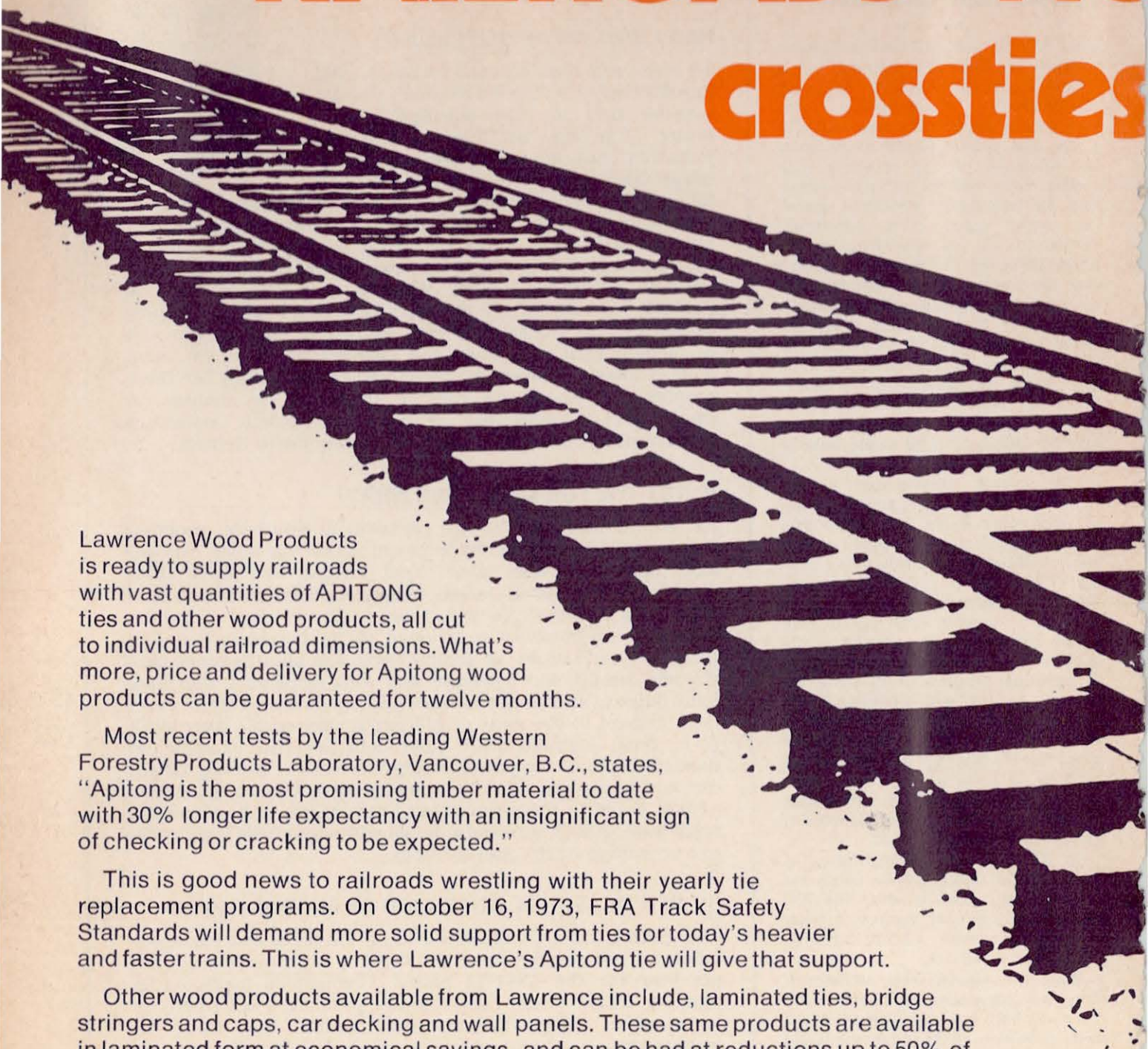
Dr. Banner, an assistant vice president at Southern, proposes that output be measured by three quantities—car-miles, carloads and train-miles, with labor input divided into these three classifications, plus a fourth, administration/overhead. Even with these divisions, problems remain. The principal concern in measuring productivity is assumed to be freight output—but there are difficulties in dealing with job classifications that straddle freight and passenger and with employees who have joint output (in m/w for instance). Other problems affect exact measurement in the sense of splitting freight service labor input from those involved with other activities (for example, in determining how many shop employees work at *building* freight cars and how many work at *repairing* cars). Too, the allocation of man hours to the various classifications has to be somewhat subjective—though most jobs do fall with reasonable logic under one or another of the classifications.

BY NEW MEASURES, WHAT KIND OF PRODUCTIVITY?

The Federal Price Commission, using ton-miles and passenger-miles, has estimated railroad productivity improvement at 6.3% per year for the 1961-71 period. Comparable methodology covering freight-service alone would produce a 5.1%-per-year improvement figure for the same period. But, using the weighted-index output measure used by Dr. Banner, the productivity-gain figure comes out at just 2.3% per year. That, incidentally, is substantially greater than the 0.3% computed for 1941-51, but less than the 2.5% estimated for 1951-61 on the Banner scale. Further, rates of improvement are not uniform among the four groupings, car-miles, carloads, train-miles and administration/overhead. And, perhaps significantly, if the over-all measurement is averaged out over five-year periods, recent experience shows up badly: For 1962-66 total rate of improvement is figured to be 3.4% per year—but for 1967-71, it works out to only 1.3% per year.

Part of the productivity-measurement problem, of course, lies in the fact that not all railroads, all trains, all miles or all ton-miles are created equal. Dr. Banner's analyses, however, are a big step toward rationality.

RAILROADS: We crossties



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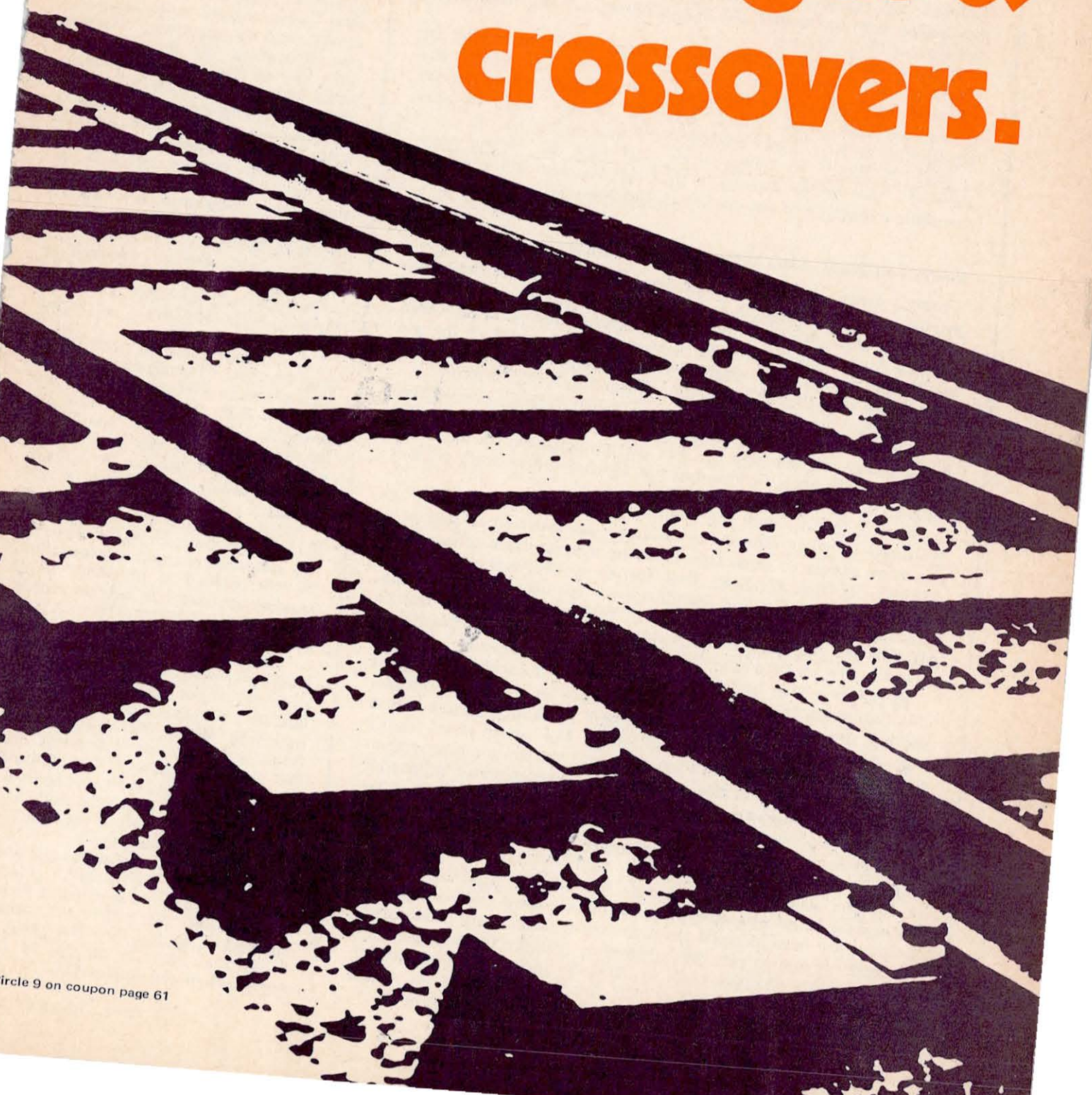

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Watching Washington

PC's RED-LETTER DATE: OCT. 12

R.M.M. McCONNELL

The big scene in that long-running cliff-hanger, "The Perils of Penn Central," is about to be played. The question: Will Congress act in time to head off the liquidators at the pass? The action shifts to Philadelphia Oct. 12, when Federal District Judge John P. Fullam opens a hearing at which all interested parties have been invited to advise the court how, if at all, the railroad can continue to function. Earlier, the judge was to receive the ICC's report on the liquidation petition of PC's trustees.

Barring the kind of massive Federal aid that could be provided by various proposals in Congress—of which the "Fannie Rae" bill in the House appears to have the best chance of success (RA, Sept. 24, p. 16)—the trustees want to start liquidation on Nov. 1 and complete the process by Jan. 1.

What is likely to happen Oct. 12? One PC officer commented: "All we're sure of is that the hearing will probably resemble a meeting of the American Bar Association."

MASS TRANSIT AND THE HANDICAPPED

Tucked away in the Federal Aid Highway Act are two provisions as American as apple pie and as explosive as a hand grenade. One requires the Washington Metropolitan Area Transit Authority to provide access to Metro stations for the handicapped and the aged. WMATA officials estimate that complying with this will cost the system about $65 million.

The other provision requires mass transit systems everywhere to provide service for the handicapped if they want to qualify for Federal aid. No one has yet put an estimate on what this could cost. In fact, no one has yet figured out exactly what it means.

Does it mean that the handicapped—the blind and those confined to wheelchairs, for example—are entitled to precisely the same access to mass transit as the average train or bus rider enjoys? Or does it mean that transit authorities must make some provision for the handicapped to travel, even if this requires creation of auxiliary transit systems? Some mass transit officials are gambling that it means the latter, and are hoping to meet the law by providing "demand-response" service.

In practice, this boils down to provision of specially-designed and equipped buses that would operate as oversize taxicabs, picking up and discharging passengers by appointment rather than on a regular schedule and route. For urban mass transit officials operating joint rail-bus systems over the same geographical area, this is fine; but what about the commuter railroads? There is no indication that sooner or later they will not be required to provide service for the handicapped, and there is no likelihood that the demand-response system will work on exclusively rail routes.

In the short run, of course, the answer probably lies in extending courtesies already provided by most railroad men, in helping the handicapped through ticket purchasing procedures, on and off trains, etc. But ultimately, service to the handicapped demands changes both in attitude and equipment design; and if the Federal Highway Aid Act is any indication, those changes are going to be the quid pro quo for Federal money.

DOT works on new rail-aid package

Declaring that "we are blessed with the most efficient, lowest-cost rail freight system in the world," DOT Secretary Claude S. Brinegar told the National Defense Transportation Association Sept. 26 that the Nixon Administration is working up a new legislative package designed to make that system "healthy, prosperous and self-supporting."

He said the Administration's railroad proposals would cover the following three broad areas:

"First, significant revisions to the Interstate Commerce Act to permit simplified rail abandonments, greater flexibility in rate making, more timely rate changes, and the opportunity for more rate innovations. We shall also seek other needed regulatory reform to increase rail's abilities to compete and to adjust to changing economic conditions.

"Second, a program to see that adequate financial resources are available to those railroads that are unable to finance essential improvements and additions to plant and equipment—especially those investments that will improve operating efficiency and reliability.

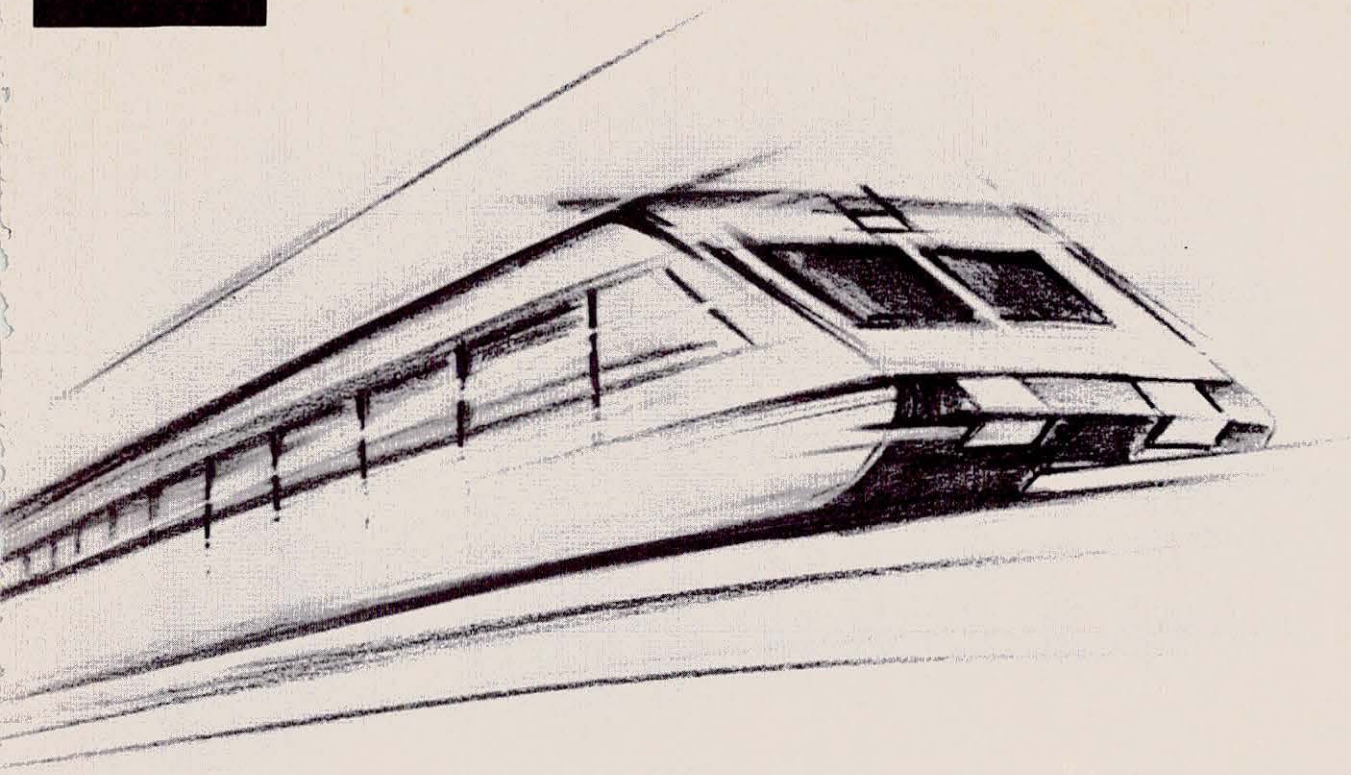
"And third, Federally-financed research and development of advanced rail technologies and operating techniques, including better management of the rail industry's freight-car fleet."

As Brinegar addressed NDTA's annual forum in Washington, the House Transportation Subcommittee had just reported H.R. 9142—the Shoup bill providing a "Fannie Rae" solution to the Northeast crisis—and he chose the occasion to reiterate the Administration's opposition to this approach. Said Brinegar:

"First, we believe it is essential that the transfer of assets from the old to the new system be arranged by negotiation. We are opposed to provisions which mandate any direct or indirect Federal taking of bankrupt properties, as H.R. 9142 does. . .

"Second, we are opposed to an excessively-detailed legislative labor settlement. We do not think it appropriate to legislate rigid labor protection or exact settlement terms. We recognize that future job protection is necessary and that displaced employees need adequate compensation. . .But we would prefer to agree on general guidelines, and then have the specifics worked out after the restructuring is under way. . .

"Third, we are opposed to any plan which commits the Federal government—in advance—to an extensive financing program. We believe the proper approach is to first find out which is needed and then to arrange for the specific funds and guarantees."



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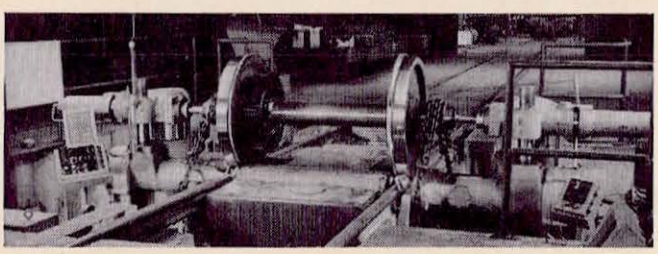

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PC vs Amtrak: Each wins a point

Penn Central has won a major victory in its fight with Amtrak for more money. The ICC ruled Sept. 24 that Amtrak should pay PC considerably more than the $40 million a year it is now paying the bankrupt carrier for operating Amtrak passenger trains—perhaps double the present amount. At the same time, Amtrak carried a major point of its own with the Commission: that payments should be based to some degree on a penalty/incentive basis.

The Commission ruled that Amtrak should pay Penn Central about $26 million more a year in order that the railroad recover its fully-allocated passenger-service costs. At the same time the Commission approved the railroad's claim that it should receive a 7.5% return on its investment in Northeast Corridor facilities. By the ICC's arithmetic, that would add $12 million to PC payments from Amtrak. PC would get a smaller amount from non-corridor investment.

Can Amtrak afford to pay? A spokesman said, "We'll have to go to Congress for the money."

Amtrak was, however, pleased at the Commission's acceptance of its penalty/incentive proposal. Amtrak proposes to set standards for on-time performance, car cleanliness, and equipment reliability, among other things. "For example," said the Amtrak spokesman, "if we set an 85% on-time performance standard, the road that comes in with 70% gets docked; but the road that turns in 90% gets an extra payment."

The ICC gave Amtrak and the carriers until Nov. 1 to agree on an acceptable penalty/incentive formula. If agreement has not been reached by then, the matter will go back to the Commission for expedited handling.

The ICC's ruling in the Amtrak-PC controversy came as the House and Senate versions of the Amtrak funding bill went into conference. The Senate bill provides $285 million in grants, and $500 million in loan guarantees; the House version, $107 million in grants and $250 million in loan guarantees.

Both versions have provisions relating to auto-train service. The Senate bill gives blanket approval to anyone to operate an auto-train service (similar to that now operated by the privately-owned Auto-Train Corp. between Lorton, Va., and Sanford, Fla.). But the House bill would permit operation of such service by a private corporation only if the ICC found that Amtrak's revenues would not be adversely affected. Amtrak, which claims that such "invasions" of its territory skim the cream off its business, prefers the House version.

Car cutbacks? Not noticeable yet

Two equipment programs do not a boom-year make. But from the programs announced by two major western roads, there is certainly no sign of a coming slump in railroad equipment acquisitions. Missouri Pacific led off with a $75-million initial 1974 authorization for locomotives and freight cars (RA, Sept. 24, p. 13), and now Santa Fe comes along with planned orders—most of them already placed—which add up to $90 million. Santa Fe's program will cover acquisition of 54 new diesel-electric units, the rebuilding of 110 units, acquisition of 1,838 new freight cars and the conversion/modernization of 73 cars. Participating in the Santa Fe orders will be GE, EMD, Pullman-Standard, ACF, Pacific Car & Foundry, Greenville Steel Car, Marathon Tank Car, Maxon Corp., Whitehead & Kales, International Car and Topeka company shops.

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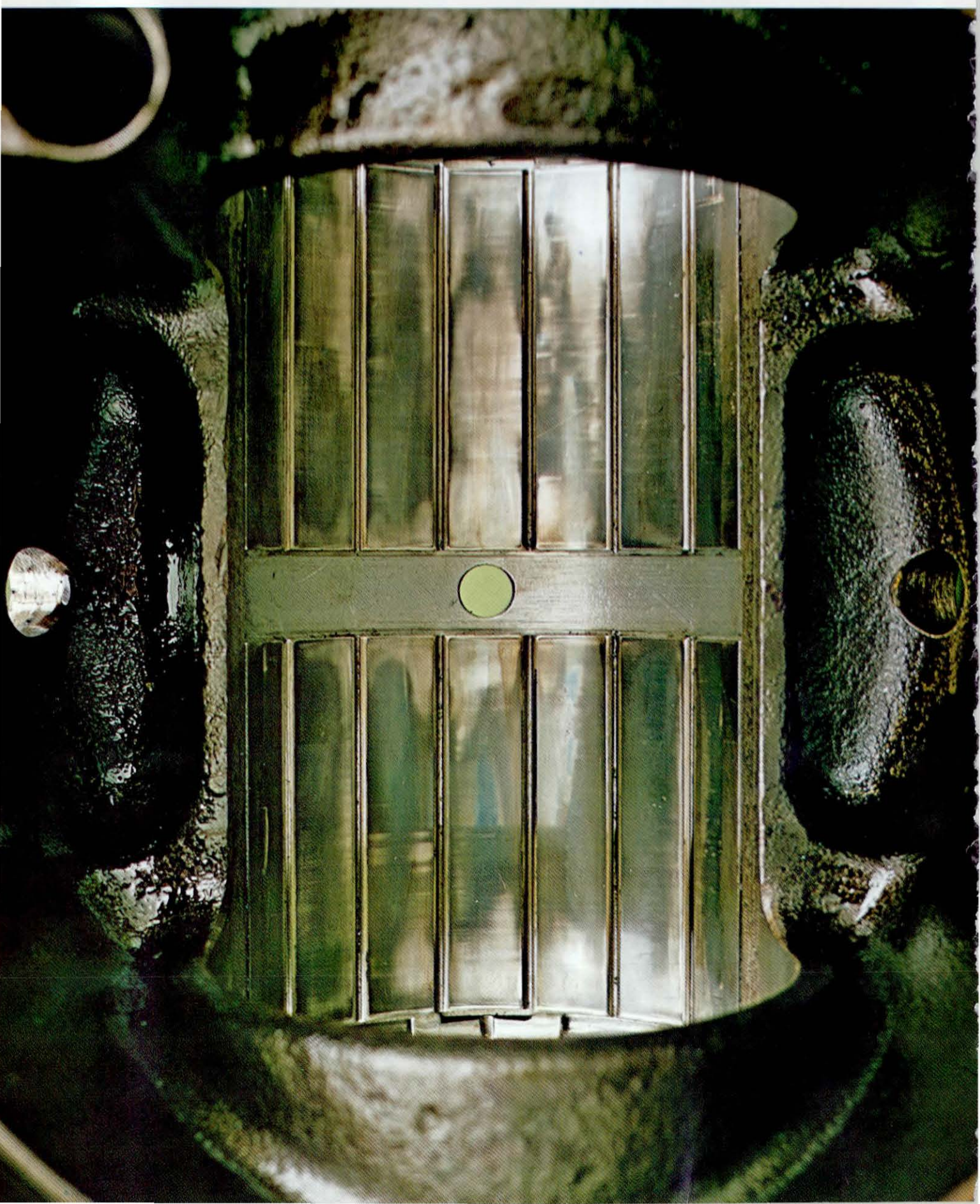
Shell's Caprinus™ T Oil 40 lubricated hard-working GE U-36's and EMD SD-45's for over 100,000 miles. How did it perform? These pictures tell the story.

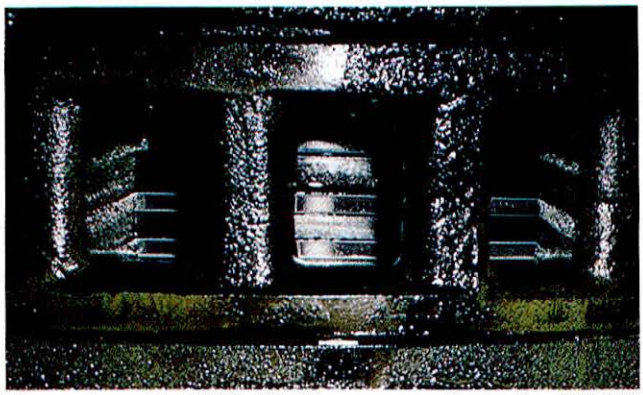
Clean, trouble-free parts show can help extend oil drain intervals



why Shell's Caprinus T Oil 40 on GE U-36's and EMD SD-45's.

Stretch oil drain and filter change intervals and still get excellent performance in high-horsepower engines. That was the basic idea behind Shell's development of this locomotive diesel engine oil having outstanding dispersancy and alkalinity retention—Shell CAPRINUS T Oil 40.

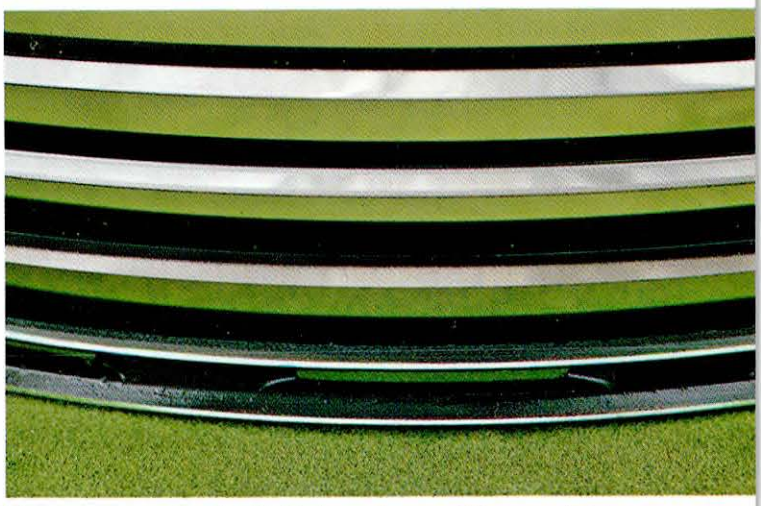
There was only one way to find out how CAPRINUS T Oil 40 would perform in standard freight service—put it to work for more than 12 months (in excess of 100,000 miles) in GE U-36's and EMD SD-45's. Change the oil in the GE U-36's at approximately 50,000 miles during the trial. Drain the EMD SD-45's at the end of 12 months. Then inspect all the power assemblies. The pictures on these four pages show what happened. CAPRINUS T Oil 40 did an exceptionally good job.



The ports on the EMD SD-45 were very clean after 100,000 miles. For example, No. 13 port is 100% open. No deposits. And look at the ring faces. Grooves on the top ring are still visible—indicative of low wear. Grooves on second and third rings are even better. (EMD chrome ring wear classifications: top—two; 2nd—one; 3rd—one).

Undercrown of GE U-36 steel crown piston taken from locomotive Unit 1798 shows no evidence of coking in the undercrown cavity after operating approximately 100,000 miles and having only one change of CAPRINUS T Oil 40 at 50,000 miles.

◀ Silver pin bushing removed from EMD SD-45 (locomotive Unit 2021) after 100,000 miles on Shell CAPRINUS T Oil 40. There is no feathering on the edges of the six grooves and most of the lead flashing is still present.



Piston rings on the GE U-36 showed no scuffing, no sticking and very low wear. Ring gaps were well within new parts tolerance. Lots of chrome still visible on top two barrel-faced rings; third, a taper-faced ring, still has more than a third of its original break-in phosphate coating; no deposits in oil ring slots.

Both engines stayed clean.

First, we looked at the top deck of an EMD SD-45 locomotive. Unit 2021. It was in excellent condition. Rocker arms, valve springs and cam shafts—clean. Top deck covers—gleaming. (See front cover.)

When this 20-cylinder, 2-stroke, 3600-HP engine was changed over to CAPRINUS T Oil 40 more than 100,000 miles ago, wide bands of lacquer were present on the top deck covers. This section of the engine was cleaned up by the CAPRINUS T Oil 40.

Now look at the rest of the critical parts, both the EMD SD-45 (from Unit 2021) and GE U-36 (from Unit 1798)—a 16-cylinder, 4-stroke, 3600-HP turbocharged diesel. The latter has in excess of 100,000 miles service with CAPRINUS T Oil 40.

Clean parts tell the story.

The parts are remarkably clean. In the EMD SD-45 the piston rings were free. Side clearance and ring gap measurements were nearly within new parts tolerance. And in the GE U-36, piston rings were free, and ring gap measurements were within new power assembly specifications.

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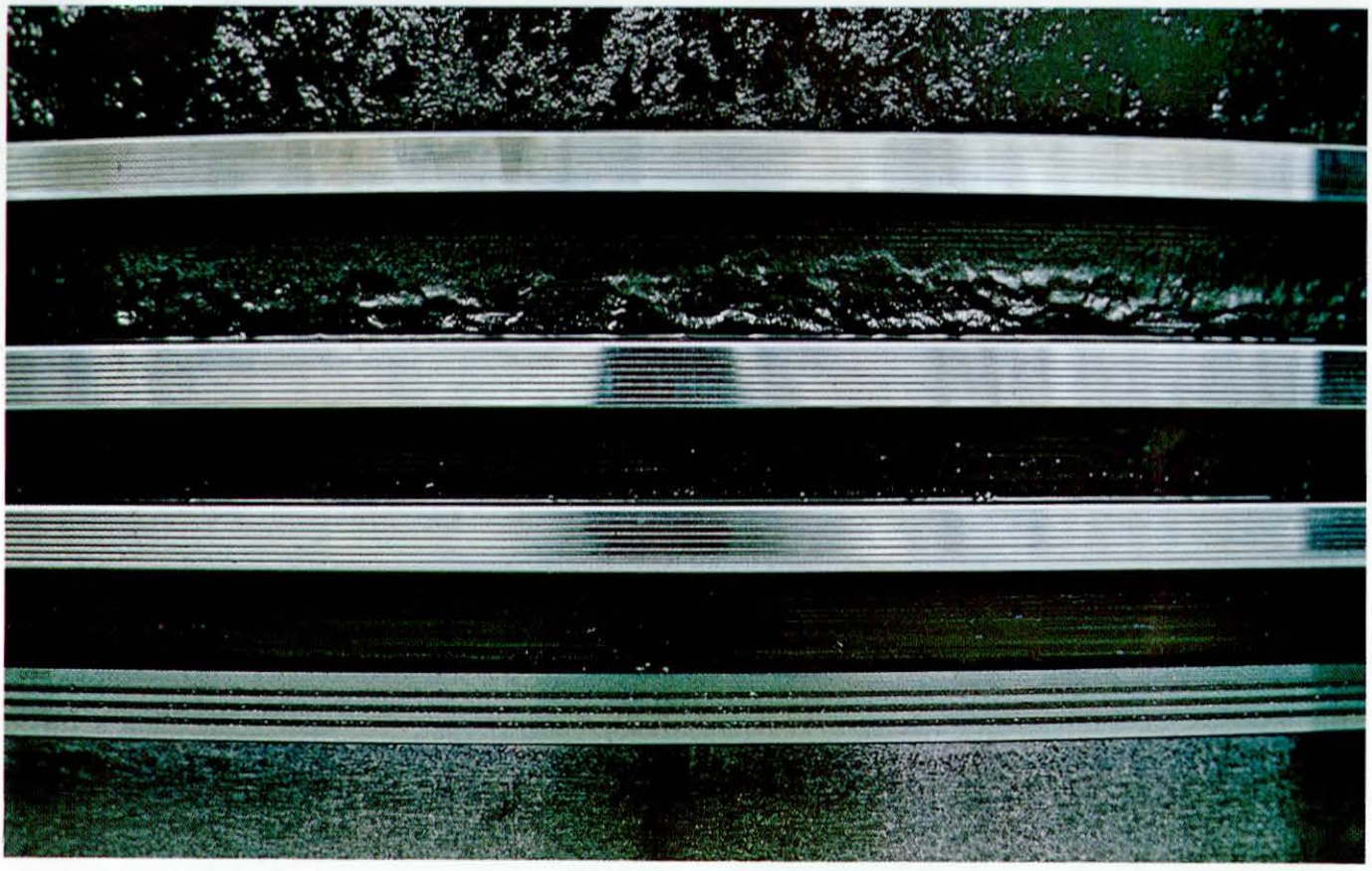
See back cover for more evidence of the capabilities of CAPRINUS T Oil 40.

Here's more evidence of the excellent performance of Shell Caprinus T Oil 40 in GE U-36 and EMD SD-45 engines.



The rings shown above from the EMD SD-45 were in excellent condition after 100,000 miles. EMD chrome ring wear classifications were: top ring—two; second and third rings—one. The rings from the GE U-36 showed no scuffing, no sticking, very low wear. Ring gaps were within new parts tolerance.

Is there an idea here for you?

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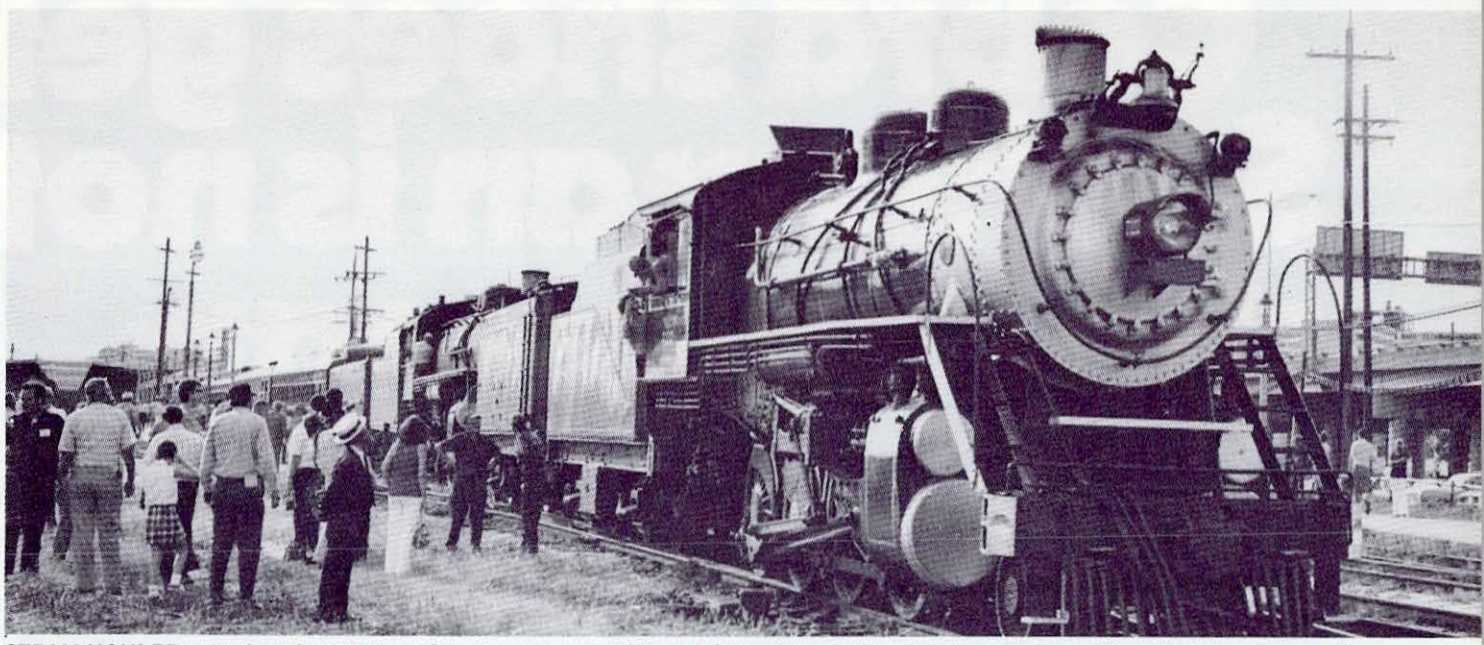

STEAM-HAULED excursion trips over lines of the Southern and L&N out of New Orleans highlighted annual convention of National Railway Historical Society. The pair of green and gold-trimmed Southern locomotives hauled 900 passengers on a round trip to Biloxi.

NRHS: A trip into the past, a look into the future

How dependent is one railroad upon another? Do competitive railroads lean on each other? These questions were pretty well answered by Southern Railway President W. Graham Claytor, Jr., and Louisville & Nashville President Prime F. Osborn, III, who shared the banquet podium at the annual convention of the National Railway Historical Society in New Orleans.

Claytor noted that Southern and SCL/L&N (the "Family Lines") are probably the most intense competitors in the industry—but, he said, if one is hurt, all fall down. He pointed out that these competitors exchange more freight with each other than with any other railroad.

Claytor underscored his often-stated belief in railroads as a growth industry. Even if projections of this country's growth are only 50% accurate, he said, the railroads will have to move increasing volumes of freight every year—and this means they will have to work even more closely together. He reminded his audience that of the 10 largest U.S. railroads, nine are prosperous, well-operated private enterprises, a fact often overshadowed by the attention focused on the bankrupts.

Claytor told the Society members what they wanted to hear about passenger traffic: Southern's Crescent Limited had experienced a 10% growth in business over the last 12 months; second sections had been required every weekend since May 1 to hold the trains to an 18-car limit. But what they didn't want to hear was that costs had far outpaced the rate of traffic growth, with out-of-pocket expenses of 7½ cents per passenger mile against a 3¾ cents gross. One answer, Claytor suggested, would be to increase fares; he predicted Amtrak would have to take this route, along with Southern. Claytor said Southern will take off the Crescent when the only way to hold losses is to sacrifice the quality of service. He noted that Southern's steam-train operations came closer to a profit than its regular passenger service, with 1973 revenues estimated at $150,000, just about covering out-of-pocket operating costs though by no means covering maintenance of locomotives and cars.

NRHS PRESIDENT E. Lewis Pardee (center) awarded "Life Membership with Honor" plaques to L&N President Prime F. Osborn, III (left) and Southern President W. Graham Claytor, Jr.

Osborn credited the NRHS with being "onto something a lot bigger than they get credit for—not just preserving history, but the free enterprise system." He limited his comments to an extemporaneous presentation, offering his prepared papers to NRHS President E. Lewis Pardee for publication in the society's Quarterly Bulletin.

When nostalgia time rolled around, the two railroads showed a measure of their ability to work together. Southern's NRHS Special from Washington, which came down from Meridian, Miss., with two Southern steam locomotives, made a one-day excursion to Biloxi over the L&N with L&N crews manning Southern's green and gold locomotives and 18 passenger cars.

—Robert G. Lewis

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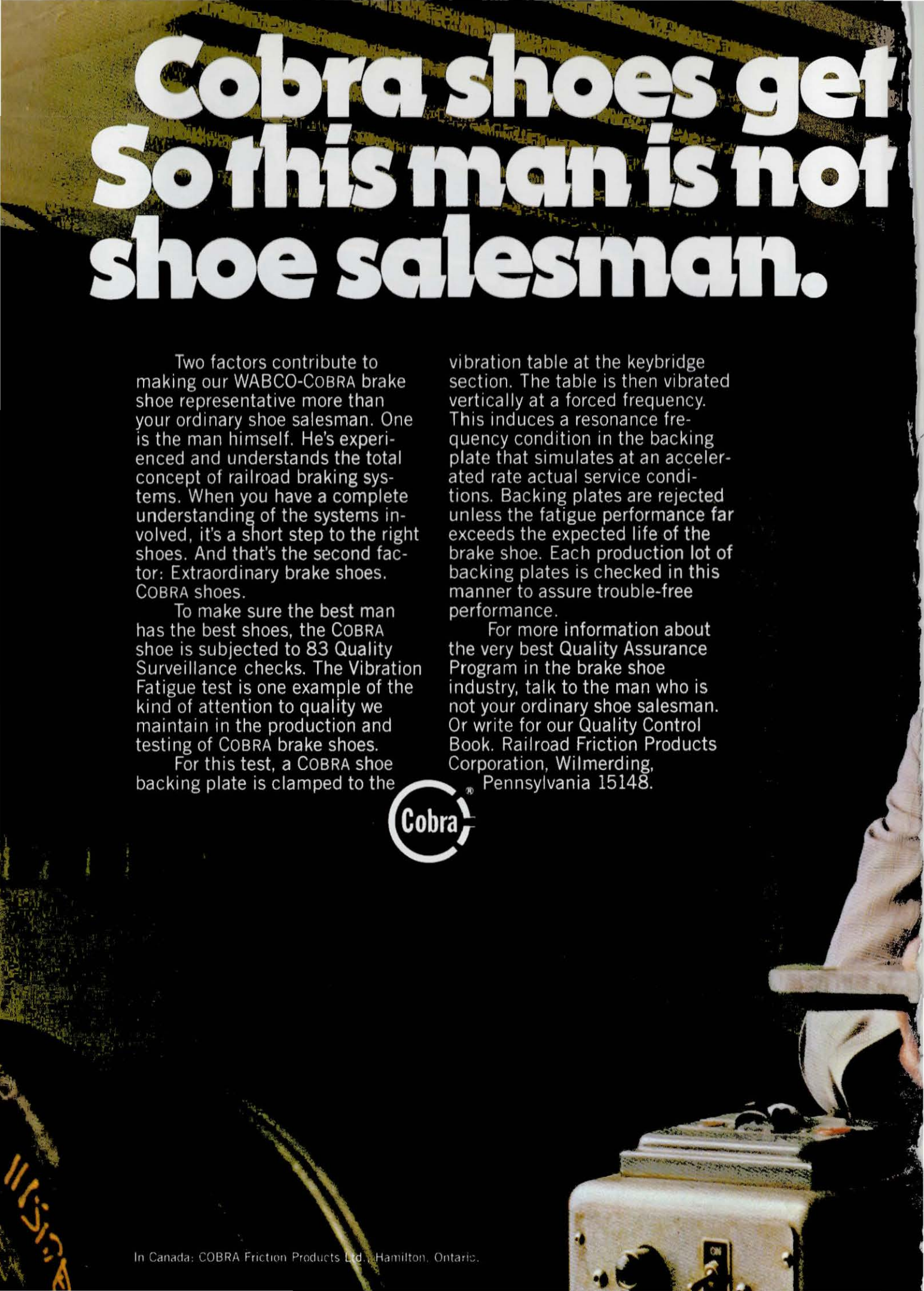

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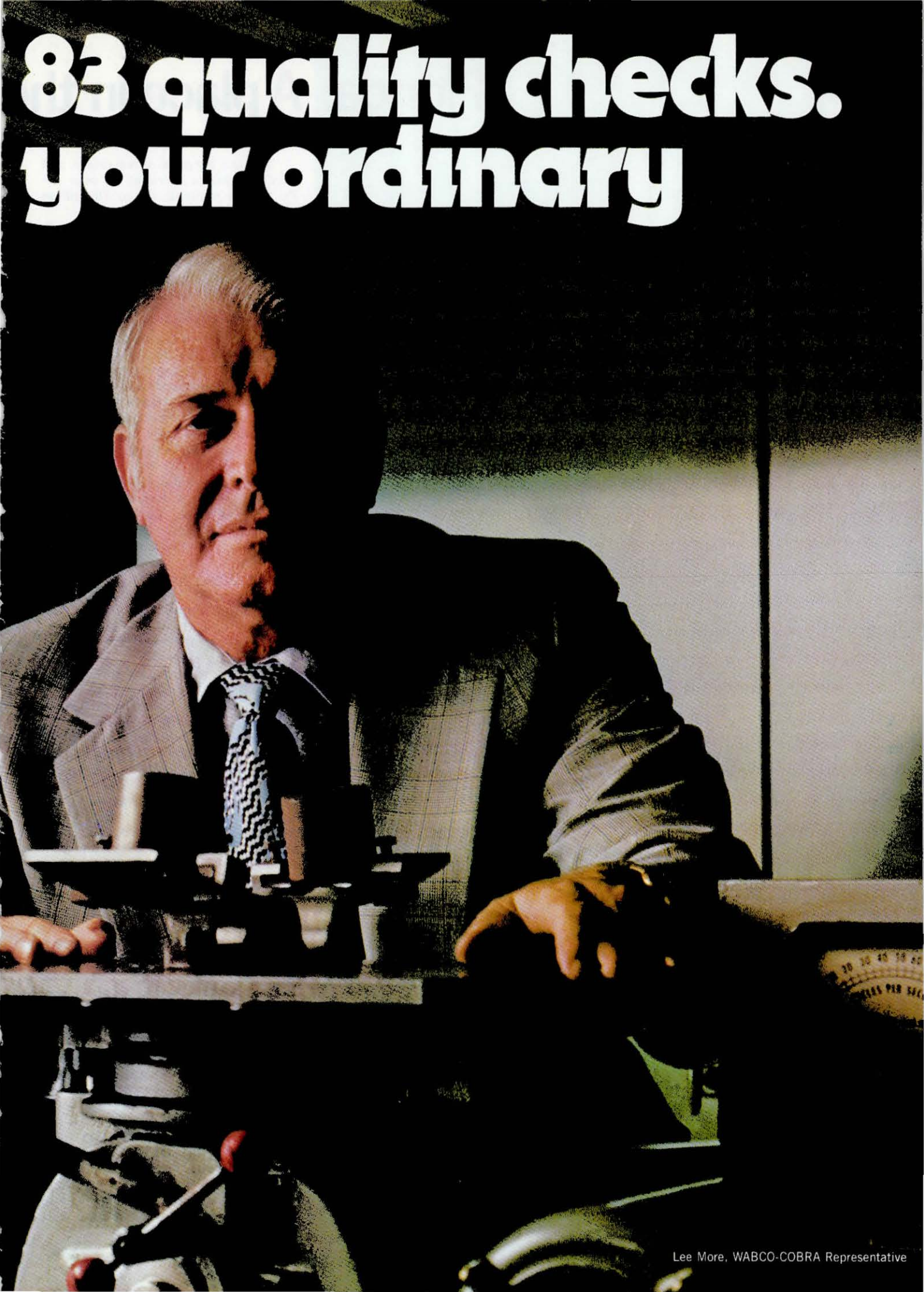
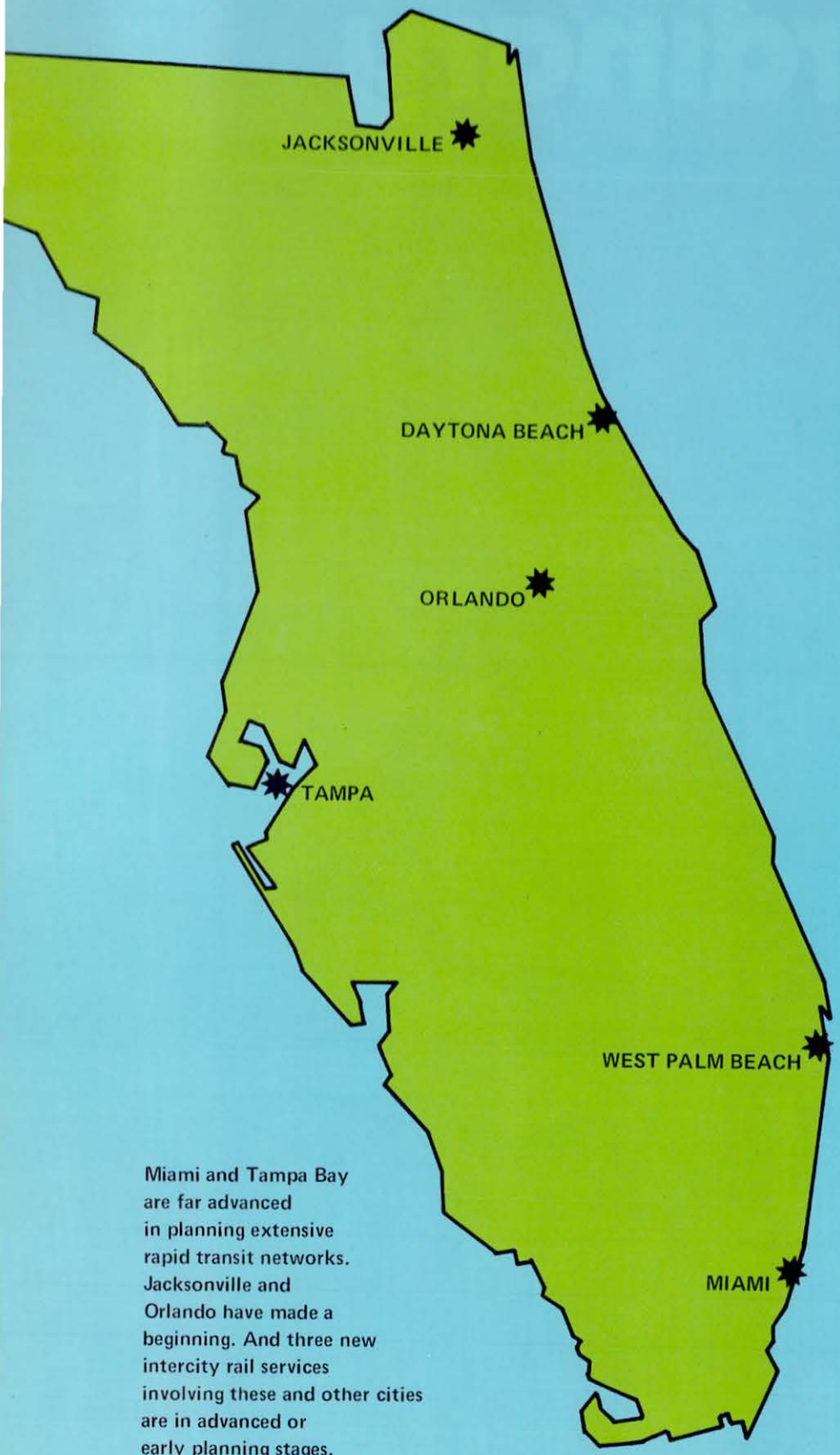


Lee More, WABCO-COBRA Representative

Florida: A place in the



Miami and Tampa Bay are far advanced in planning extensive rapid transit networks. Jacksonville and Orlando have made a beginning. And three new intercity rail services involving these and other cities are in advanced or early planning stages.

"This is a big piece of real estate, and there are people swarming all over it—7½ million residents, 25 to 30 million tourists.

"We have," adds Walter L. Revell, Secretary of Transportation for the State of Florida, in a thoughtful understatement, "something of a people-moving problem."

Rich in revenues (its general fund will actually show a surplus this year), foresighted in planning (a law has been on the books for three years requiring the state to pick up one-half of the local share of any mass transit capital outlays), Florida is rapidly closing in on its people-moving problem.

Two of its biggest population clusters—Dade County, embracing Miami and Miami Beach, and the Tampa Bay area, taking in, during the immediate planning stage, Tampa, St. Petersburg and Clearwater—are racing ahead with plans for extensive rapid-transit networks.

Dade County has in mind a 54-mile loop system with a spur to Miami International Airport; it will come in at something less than $1 billion, according to present estimates.

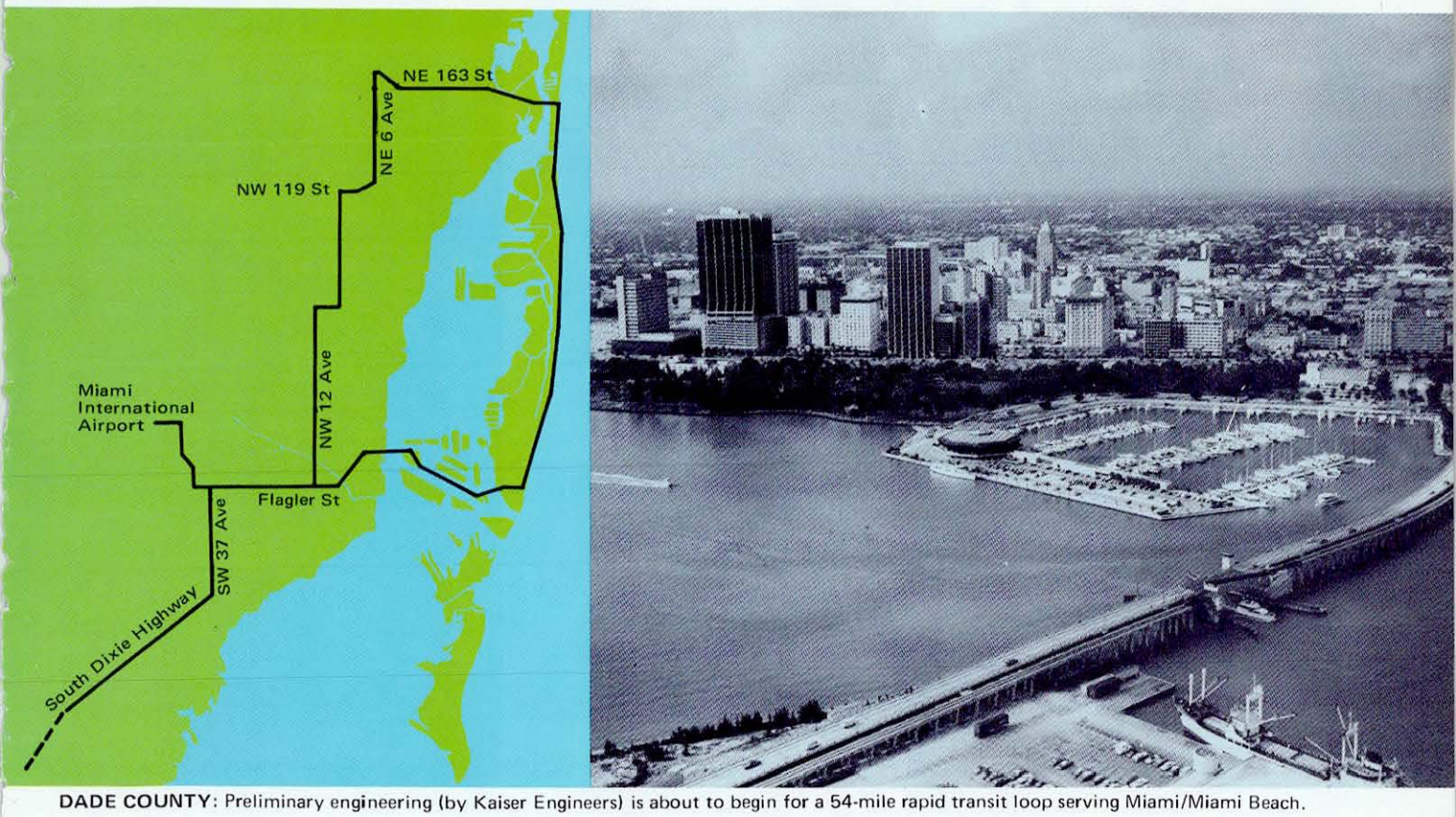
Tampa Bay is thinking in terms of a 65-mile system tentatively price-tagged at between $1.5 billion and $2 billion (it could go to 100-110 miles if Sarasota and Manatee counties decide to join Pinellas, Hillsborough and Pasco counties in the Tampa Bay Rapid Transit Authority, or TBART as it is locally known).

Neither Miami nor Tampa Bay is yet locked into a technology. The decision could go to conventional rail or to rubber tires or even to some other kind of fixed-guideway technology.

Other Florida cities are starting to take a close look at, if not actually hop onto, the rapid-transit bandwagon. Both Jacksonville and Orlando are in the preliminary-study stages. The present feeling is that Miami will come in first with Tampa Bay a close second, and Jacksonville and Orlando a little way down the pike.

Meanwhile, intercity railroad transportation also appears to be due for a renaissance in Florida. In addition to proposed Central Florida Corridor trains shuttling between Tampa Bay, Orlando/Disney World and Daytona Beach (RA, Feb. 12, p. 18), Florida's DOT has some other, less well publicized plans for new fast-train services. DOT Secretary Revell has been talking with Amtrak about putting in Turbotrains between Miami and Orlando; he has also had exploratory talks with Florida East

sun for rail transit?



DADE COUNTY: Preliminary engineering (by Kaiser Engineers) is about to begin for a 54-mile rapid transit loop serving Miami/Miami Beach.

Coast officials about using FEC's right-of-way for still another set of trains connecting West Palm Beach and Miami.

Amtrak itself—which estimates it will move between 600,000 and 650,000 people into and out of Florida in 1974—has just announced that it will inaugurate auto-train service between a still-undetermined point in Florida and a midwestern city, probably Chicago, during the upcoming winter season. This is Amtrak's response to the two-year-old venture of the privately owned Auto-Train Corp. in ferrying automobiles and their passengers between Lorton, Va., and Sanford, Fla. (a venture so successful that Auto-Train is planning to put in a set of trains between Cincinnati and Sanford).

Clearly, there is a place in the Florida sun for mass transit in general, and rail transit in particular.

● **First, Miami.** If all goes as planned, Dade County's transit system could become operative in about four years, though cautious observers prefer a 5-to-10-year time frame. Initial studies have long since been completed. Nearly a year ago voters approved a bond issue by a two-to-one majority to pay the local share of the capital costs. (Since the Federal government, under a recent amendment to the Urban Mass Transportation Act of 1970, will now pick up 80% of the total capital cost, and the state is committed to paying for half of the remainder, the county's payout will come to only 10%.)

Kaiser Engineering now has a contract for preliminary engineering. This phase will include selection of vehicle technology, guideway alignment, and station locations and will take about 18 months. Final design can then begin, with first vehicle delivery scheduled about two years later.

While the initial proposal was for a fully automated, electrically operated, rubber-tired system, both local and state planners emphasize that all options are still open. The only thing that seems fairly certain is that the guideway will be either at grade or aerial, due to the locality's high water table.

Final routes have not been established, but Gene Simm, director of the Dade County Department of Traffic and Transportation, describes the tentative corridors: "Starting with the north end of Dade County, beginning at the 163rd street site of the Interama bicentennial observance, the rapid transit alignment extends easterly to Miami Beach; traverses the full length of Miami Beach to MacArthur Causeway on the south; follows the causeway to the mainland; shifts southerly along or near Biscayne Boulevard to the downtown area, then goes northerly to 163rd street to close the loop, and westerly to the eastern edge of Coral Gables, with a spur northwesterly to Miami International Airport, and another southerly to the U.S. I corridor, following U.S. I southwesterly to Cutler Ridge in South Dade County."

Miami has come in for some criticism from those who feel that its transit plan is too local and not sufficiently regional. There are also fears that plans may be based too much on what today's movement patterns are rather than what tomorrow's are likely to be. One man who is well aware of this danger is William K. Fowler, who is director of the division of mass transit operations in the DOT office in Tallahassee. Says Fowler: "You can't just do a modal split and base your planning on that—because things will change as a result of the transit system: the city will reconfigure, it will redensify, and therefore your modal split, if you try to do it based on extrapolating past trends, is going to be insufficient for planning and building a rapid transit system."

While Dade County planners have emphasized their feeling that grade-separated rapid transit is essential to

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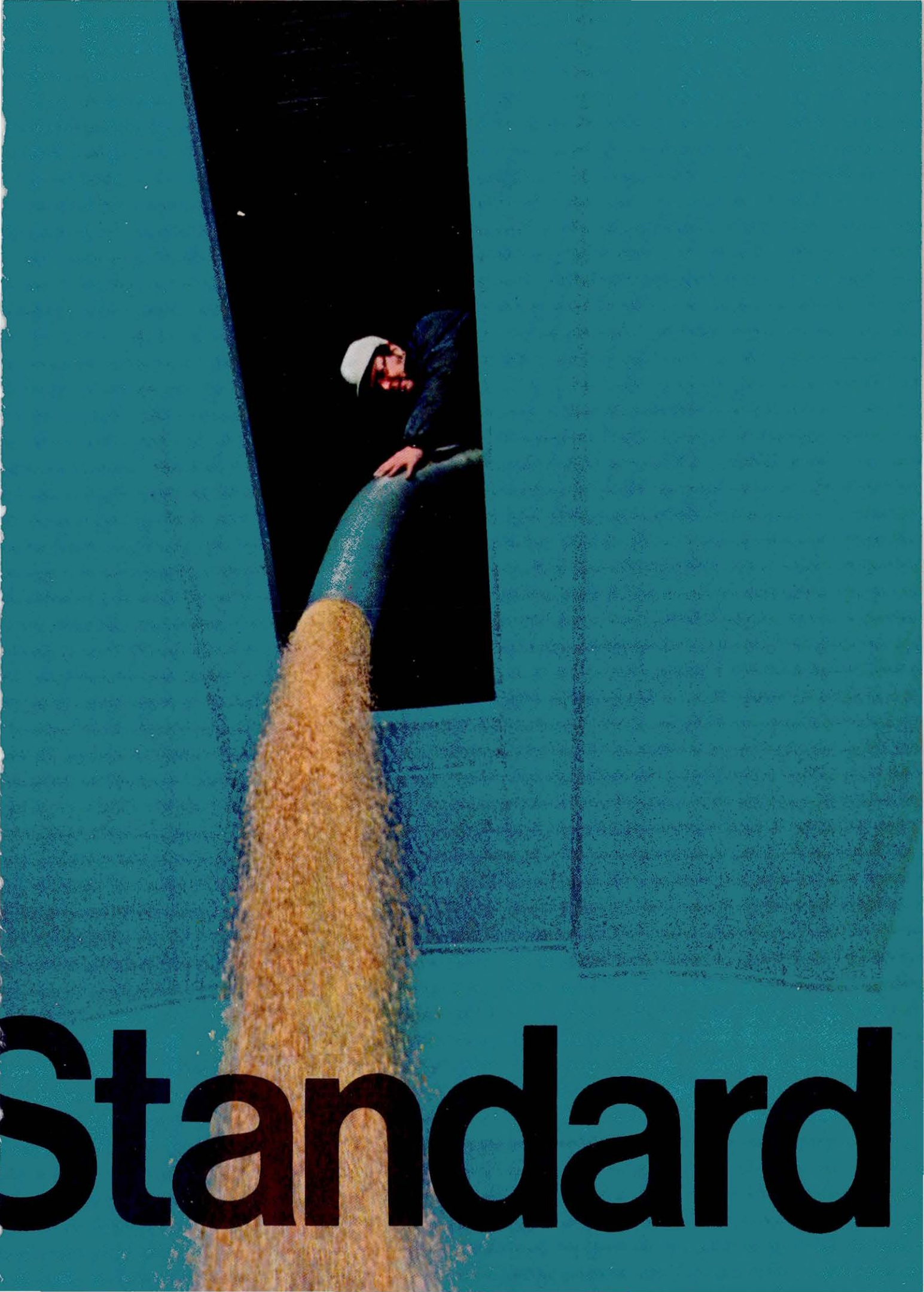

Standard

TAMPA BAY's 65-mile rapid transit will serve Tampa (above), St. Petersburg and Clearwater. A 110-mile system could evolve if two adjacent counties join the three that are now in TBART.

achieving a balanced transportation system, they are not relegating buses to a used-car lot. The rapid transit system will be supplemented by a system of trunk-line bus routes operating on expressways and arterial streets to serve areas not directly served by rapid transit. There will also be an extensive network of feeder buses connecting with rapid transit vehicles, plus "mini-systems" of buses at selected rapid transit terminals to provide circulation in the vicinity of these stations and link major traffic generating areas with the rapid transit facilities.

Whichever direction Miami finally moves in, the point is Miami *is* moving. And the same can be said of the Tampa Bay area.

● **Next, Tampa Bay.** Tampa Bay is slightly behind Miami insofar as an engineering timetable and a precise financing mechanism are concerned; but it is probably further along in institutional and organizational terms, and in the context of truly regional planning.

Three years of intensive studies have led to the creation of the Tampa Bay Area Rapid Transit Authority, and the sketching of the broad outlines of a system that will immediately serve three counties of the area, and ultimately perhaps five. Tampa Bay planners have looked at, and much admire, the San Francisco Bay Area's BART concept, and there is considerable feeling that a similar system may evolve on Florida's west coast. However, Norman Thompson, who is acting executive director of TBART (as well as executive director of the Tampa Bay Area Regional Planning Council), does not rule out the possibility that Tampa Bay might opt finally for a rubber-tired system—similar, perhaps, to Westinghouse Electric's Skybus—or even for exclusive busways. By next spring, Thompson and his associates hope to be ready to recommend a type of system as well as corridor routes. The present timetable calls for a complete package to go to the voters within the next 3½ years and for actual construction to begin within five years.

Financing is still undecided. While there has been talk of an ad valorem tax to finance the 10% local share, which could amount to as much as $200 million, that route now seems unlikely. Present thinking, says Thompson, is in the direction of a tourist tax.

Tampa Bay has one formidable physical barrier to any regional transit system—the bay itself. The narrowest crossing would be about six miles. But its waters are shallow and, says Thompson, "an aerial structure could be put across without too much difficulty." The whole Tampa Bay system will very likely, in fact, be at grade or in the air.

Does Tampa Bay really mean business?

Thompson concedes that the area's plans may sound a little grandiose to outsiders—and even to some insiders. "People keep asking me, 'Is it for real?' I assure them that it is, indeed, for real. We have a peak seasonal population approaching 2 million. By 1980 it will be 2.5 million. With the kind of growth we're experiencing, you just can't build enough highways to handle the traffic. And even if we could, there are environmental considerations that would compel us to take the rapid transit route. We can't afford to wait."

Waiting can, indeed, prove more costly in Florida than in some other areas. Land prices are escalating at the rate of about 18% a year. This, along with normal inflation factors, could push costs out of sight in just a few years.

● **Central Florida Corridor.** The high cost of land is one reason (environmental considerations are another) why Central Corridor planners want to locate their rails or other fixed guideway along the route of Interstate-4, possibly even within the I-4 median strip for much of the way. "We're now carrying out a physical alignment and constraint study to see just what the problems will be in that corridor, and what all the space limitations might be," says DOT's Fowler.

DOT and local planners have already concluded that 150-mph speeds will be required in the corridor if the train service is to compete effectively with the automobile. Initially, there was considerable talk about putting tracked-air-cushion vehicles (TACV) in the corridor, or even magnetically-levitated trains, but present thinking is in the direction of off-the-shelf technology. "I think we ought to wait until the Feds have that kind of thing [TACV or maglev] in service and have proved it out," says Fowler.

The Corridor proposal has important support not only from civic and economic interests in the area but from key politicians, and the chances for swift implementation—probably within the next three years—look good. At its most recent session, the State Legislature created a select joint committee to assist the DOT in moving the project along.

The proposed Corridor trains would run from the Tampa Bay area on the Gulf Coast through Lakeland, Disney World, and Orlando via the McCoy Jetport to Daytona Beach; there is some talk of a spur to Cape Canaveral.

● **Turbos for Florida?** The idea of putting Turbotrains into service between Orlando and Miami was put to Amtrak more than a year ago by the State DOT at a time when Amtrak was casting around for an experimental Turbo route outside of the Northeast Corridor.

"California, Florida and Illinois were all interested in these Amtrak Turbos," says DOT Secretary Revell. "Illinois got the first ones. We want Florida to be second. We have done some preliminary studies and we think the Miami-Orlando market is a viable one. Yes, there would be an operating deficit during a one-year demonstration period, but we are prepared to pay two-thirds of the deficit." (An Amtrak spokesman confirmed that tentative talks have been held with Florida on the subject but indicated that funding could be an obstacle. "We haven't seen the color of their money," he said. A number of states, he added, are interested in Amtrak Turbo service, including New York, which has a $3.5-billion bond issue proposal, due to go before the voters in November, containing a provision for funding high-speed rail service between New York City and Buffalo.)

The West Palm Beach-Miami proposal involving FEC lines is more nebulous than any of the others at this time, but it is one which Revell intends to pursue. He emphasizes that any agreement worked out would preserve the integrity of FEC's freight service. ■

Petroleum and You (A History of the Former)

Chapter Five: Threshold of a New Horizon

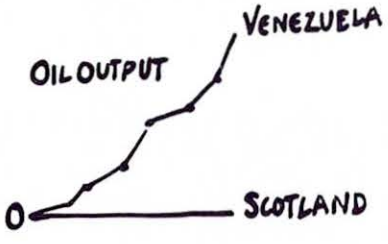
The advent of the automobile wrought unparalleled changes which made themselves felt throughout the entire spectrum of the industrial world within a few short years.* And none was to know greater upheaval than the petroleum industry, for as a consequence an oft-neglected product of the refinery—gasoline—was to emerge as the very bread and butter of the industry, which explains why people in the oil business have always had such a hard time getting anybody to drop by for brunch.

And of course the automobile required not only gasoline, but a host of lubricants, greases and motor oils without which it would soon grind to either a halt or a standstill, depending on the skill of the driver. Thus, an ever-increasing demand for petroleum was triggered. Exploratory ventures were undertaken, and by 1900 "It's a gusher!" had become a familiar cry throughout California and the Southwest. Not only that, a year later oil was discovered.

In the meantime an Englishman named William Knox D'Arcy completed negotiations to establish an oil industry in Persia, and later contracted to supply fuel oil to the Royal Navy. This was the same William Knox D'Arcy who had previously made a fortune gold-mining in Australia, not to be confused with the William Knox D'Arcy who owned a tobacco shop on Edgeware Road and who usually overcooked his vegetables.

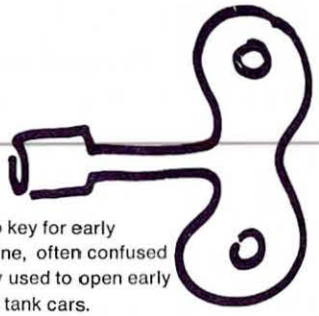
Overcooked carrots from kitchen of the wrong William Knox D'Arcy.

In the Western Hemisphere substantial oil discoveries in 1914 in the Lake Maracaibo area soon made Venezuela a name to be reckoned with, especially for poor spellers. Within a decade and a half the country ranked second only to the United States among the world's oil-producing countries, not to mention an even higher ranking among the non-oil-producing countries.



Seven-year comparison chart in which Venezuela comes out looking extra good.

The First World War accelerated even more the spiraling demand for petroleum. The airplane came into prominence, first as a means of reconnaisance and later as a weapon, joining the growing family of vehicles that depend upon petroleum for their lifeblood. Ships, by this time, ran almost exclusively on fuel oil. And modern-thinking proponents of the diesel-powered submarine were making significant inroads against advocates of the less-efficient wind-up submarine, which tended to go very fast at first but then gradually ran down, often leaving the crew stranded miles from the nearest key.



Wind-up key for early submarine, often confused with key used to open early railroad tank cars.

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*Some historians contend that these years were not short at all, pointing out that 1908 in particular was well above average height.

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What the Highway Act will do for mass

Public Law 93-87 of the 93rd Congress—the Federal-Aid Highway Act of 1973—is 43 pages of finely-printed legalese which describes how the government proposes to spend more than $20 billion during fiscal 1974, 1975 and 1976. Buried in the small print is language which caused the bitterest fight of the year on Capitol Hill (it took 28 meetings of a House-Senate conference committee to agree on the final wording). As President Nixon described the legislation which finally emerged: "This Act is not only a highway act. One of its most significant features is that it allows the Highway Trust Fund to be used for mass transit capital improvements. Under this Act, for the first time, states and localities will have the flexibility they need to set their own transportation priorities. The law will enable them to relieve congestion and pollution problems by developing more balanced transportation systems where that is appropriate rather than locking them into new highway expenditures which can sometimes make such problems even worse." That is what the fighting—between entrenched highway interests and determined advocates of a mass-transit alternative—was all about.

Just what will the Act do for mass transit in general, and for rail transit in particular? Out of interviews with government and industry officials, Railway Age pieced together this picture.

Will any new transit aid resulting from the Highway Act be in lieu of existing Federal aid?

No. New funds flowing to mass transportation from highway-related projects will be in addition to monies provided under the Urban Mass Transportation Act of 1970, as amended. That Act called for Federal expenditure of $10 billion on mass transit projects over a 12-year period; Congress provided an initial $3.1 billion (for disbursement by the Urban Mass Transportation Administration) as the first portion of that commitment. The new Federal-Aid Highway Act, in addition to permitting the substitution of mass transit projects for certain highway projects (as described below), also provides $3 billion in new contract authority to UMTA for a two-year period. This means that authorized commitments of UMTA in the next two years will be at a $1.5-billion-a-year level rather than the previous $1-billion a year. At the same time, the Federal share of any UMTA-funded project was raised from 66 2/3% to 80%. The Office of Management and Budget does not have to permit the spending of all the money which Congress authorizes; however, since President Nixon personally asked for the $3 billion in new contract authority, the chances are good that the full amount will be budgeted.

Newspaper reports have suggested that around $1 billion in Highway Trust Fund money is likely to be diverted to mass transit projects during the second and third years of the new Federal-Aid Highway Act. Is that really in the cards?

Probably not. It is true that the Act, in the year beginning July 1, 1975, will permit local officials to spend up to $200 million of urban highway funds, or one-fourth of the urban total, on bus projects; and in the year beginning July 1, 1976, local officials can opt to spend the entire $800 million of urban highway funds on bus or fixed rail projects. However, these are options—not requirements.

"As a practical matter," says one transit industry leader, "nowhere near the total available amount is likely to go into transit, since most states are rural and even the urbanized states have heavy urban highway demands. Estimates vary, but the presumption is that not more than $50 million to $100 million of the $800 million that will be available for local option in fiscal 1976 will actually be opted for transit purposes by the state and local governments. For example, New York, which will get the largest share of that $800 million, around $78 million, is under considerable pressure to do some urban highway work. So you've got limited funding and great pressures.

"Nevertheless," this transit official emphasizes, "it represents an opening wedge and is of considerable symbolic importance. We weren't looking for instant new monies out of the Highway Trust Fund. The idea was to set the stage for the concept being applied that would introduce some flexibility in the Trust Fund in an effort to promote balanced transportation gradually."

In addition to the option to divert urban highway funds to transit, the Highway Act has an "Interstate transfer" provision. What precisely will that do for mass transportation?

This is an important provision of the highway bill which potentially could divert hundreds of millions of dollars to rapid transit. Briefly, this section of the Act says that cities and states can substitute a mass transit project for an already-approved highway project. To protect the integrity of the Interstate Highway System, the concurrence of the Federal government will be required. The Highway Trust funds will also be protected, since the money for any substituted transit project would come out of general revenues.

Says the transit leader quoted above: "This could represent a big pot of dough. All of the interstate segments that are in dispute around the country potentially could add up to around $5 billion. New York's West Side Highway alone could involve $1 billion. The Chicago crosstown highway, which is in dispute, could involve up to $800 million. Boston is another possible Interstate transfer city. If everyone is willing to accept the idea that Interstate 95 stops and goes all the way around Boston, that could conceivably result in the transfer of the equivalent amount of general revenue funds to transit.

"The importance of this provision of the Highway Act is very great. In the last couple of years urban links have gotten more and more in conflict with environmentalists and local homeowners. If you can get all of the interested parties to agree that the Interstate segment is not needed and that there is a corresponding need for public transport, then it is a very nice concept, indeed."

Does all of this mean that the concept of a separate Transit Trust Fund is now dead?

Not at all. The Highway Act itself raises the possibility of establishing a mass transit trust fund.

Section 138 of the Act says this:

"(a). The Secretary [of Transportation] shall, in cooperation with the Governor of each state and appropriate local officials, make an evaluation of that portion of the 1972 National Transportation Report, pertaining to public mass transportation. Such evaluation shall include all urban areas. The evaluation shall include but not be limited to the following:

(1) Refining the public mass transportation needs contained in such report.

(2) Developing a program to accomplish the needs of each urban area for public mass transportation.

(3) Analyzing the existing funding capabilities of Federal, state and local governments for meeting such needs.

(4) Analyzing other funding capabilities of Federal, state and local governments for meeting such needs.

(5) Determining the operating and maintenance costs relating to the public mass transportation system.

"The Secretary shall, not later than July 1, 1974, report to Congress the results of this evaluation together with his recommendations for necessary legislation.

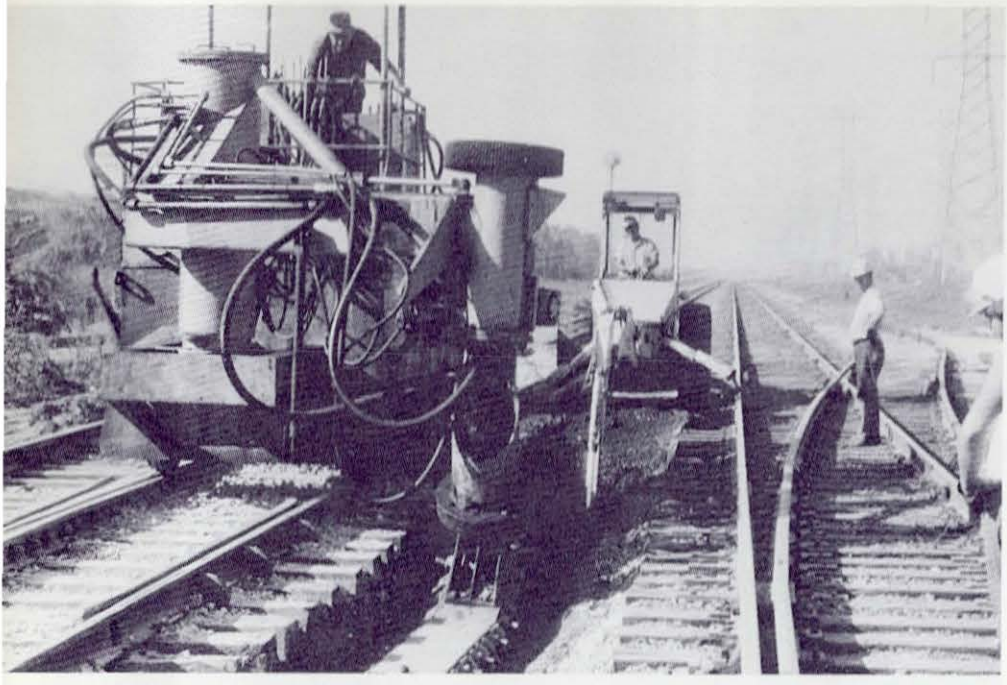
"(b) The Secretary shall conduct a study of revenue mechanisms, including a tax on fuels used in the provision of urban mass transportation service, and an additional gasoline tax imposed in urban areas, which could be used now or in the future to finance transportation activities receiving financial assistance from the Highway Trust Fund. Such study shall include an analysis of the magnitude of the various potential sources of user tax revenues, the rates at which such taxes could be levied (including possible differential rates), the mechanisms for collection of such taxes, the incidence of such taxes, and the potential impact on transit usage caused by such taxes. The Secretary shall report to the Congress the findings of his study by no later than the 180th day after the date of enactment of this section."

So the stage is set for a debate on the whole question of transportation funding. One outcome could be the establishment of a general transportation trust fund. Or parallel highway, public transit, and aviation trust funds could emerge. One thing seems certain: the Highway Trust Fund that has existed since 1956, with rigid dedication to highways and nothing else, appears to be dead.

Didn't the original version of the Highway Act of 1973 contain a provision for transit operating subsidies?

Yes—but that provision was dropped; it would almost certainly have caused a Presidential veto of the entire bill, since the Nixon Administration remains adamantly opposed to direct Federal operating subsidies. A separate operating subsidy bill has now passed the Senate but is not expected to clear the House. However, sponsors feel that mounting pressures will bring about Federal operating money—as well as the capital funds now available—within the next two or three years. ■

SYMBOLIC OF THE REVOLT against highways is Interstate 95, which has a 10-mile gap in the Boston area where its completion is the subject of bitter dispute. I-95 now stops in a grove of trees near junction with circumferential route 128 (above). Under Interstate transfer provision of the new Highway Act, disputed highway sections may be dropped (provided all concerned agree that the integrity of the Interstate system will be preserved) and equivalent sums of money, from general revenues, put into mass transit facilities.



KERSHAW SWITCH UNDERCUTTER excavates fouled material from under a turnout and rakes it into a trench being dug by a backhoe.

Santa Fe aims for better-riding turnouts

At least some of the mainline turnouts on the Valley Division of the Santa Fe's Coast Lines are giving "a better ride than ever before," according to Santa Fe. The reason: These switches have been rehabilitated in accordance with a procedure now being employed in a systemwide program of this type of work on Santa Fe.

In this program, the track through the turnout is undercut and the old ballast removed to a depth of about six inches, the ties are renewed and respaced as necessary, the rail anchors are adjusted as required, new ballast is unloaded and the turnout is raised, tamped and lined. As a result of this work, about six inches of clean ballast is placed under the ties. If the switch is in a sag, it is raised sufficiently to make the surface conform with that of the adjacent track.

● **Why work is needed.** Why has Santa Fe undertaken the switch rehabilitation program? Past practice when surfacing track out-of-face or performing other types of out-of-face work has been to skip the turnouts. One result is that eventually the switches get out of surface and line, and sometimes they are found to be in a sag compared with the adjoining track. Also, the ballast becomes fouled, resulting in poor drainage. Because of these conditions, the switches develop poor riding qualities and become expensive to maintain.

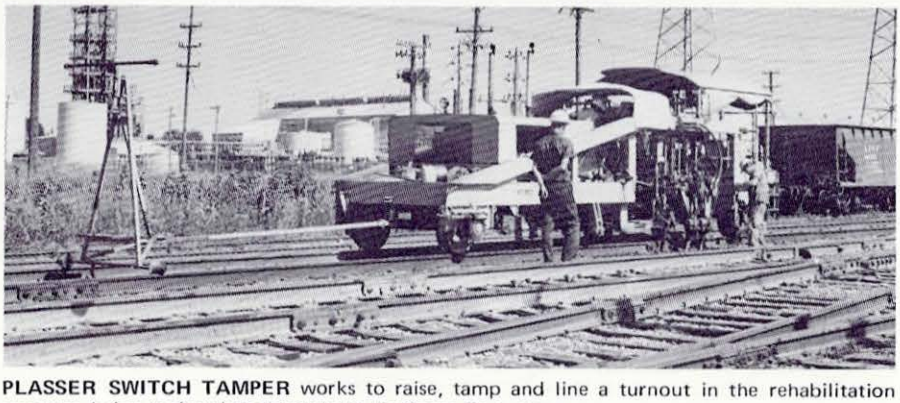
Behind the decision to undertake a program to correct these conditions is the availability of equipment especially designed for work at switches. This includes the Kershaw Switch Undercutter, an ontrack machine which undercuts the track at switches by means of an endless chain equipped with cutting and raking teeth. The chain works in a horizontal plane, and its race is supported at one end in a horizontal arm 12 feet long.

The undercutting arm is so designed that it can be raised and lowered in a vertical plane and swung transversely to place it at an angle or parallel with the track. These movements enable the machine to undercut turnouts and multiple tracks placed on close track centers. It undercuts from five inches to six inches below the bottoms of the ties, raking the ballast out to the shoulder of the track.

Another unit mentioned by Santa Fe as being especially designed for switch maintenance is the Plasser Yard, Switch & Spot Tamper. A feature of this machine is its individually-tiltable tamping arms which are intended to give the unit added flexibility when tamping ties in turnouts. Santa Fe has acquired 10 of these tampers, all of which are being used in the program. Also being used are three Jackson Model 2600 tampers which the road has recently acquired. In cases where the ballast is not excessively fouled, the switch is simply raised, tamped and lined and the undercutter is not used.

● **Expensive but worthwhile.** The switch work is normally performed by a crew of nine or ten men including the foreman, the actual number of men depending on local conditions. A production goal of a No. 20 turnout per day for each gang has been set for this continuing program. Santa Fe explains that, while the work is expensive, the results in better-riding turnouts and reduced maintenance costs are considered sufficient to justify the cost.

In one switch-rehabilitation operation, for example, to permit the old ballast to be wasted a backhoe was being used to excavate trenches alongside the track into which the waste material was raked by the undercutter. These were being made about three feet wide and five feet deep. The track was being supported on hand jacks behind the undercutter to permit the crib ballast to be knocked into the undercut space. After the new ballast had been unloaded the turnout was surfaced, lined and tamped by a Plasser switch tamper. Other personnel, in addition to the switch-rehabilitation gang, included a signal maintainer and helper, whose function was to prevent any damage to signal cables during trenching work. ■



PLASSER SWITCH TAMPER works to raise, tamp and line a turnout in the rehabilitation program, being undertaken throughout the Santa Fe system.

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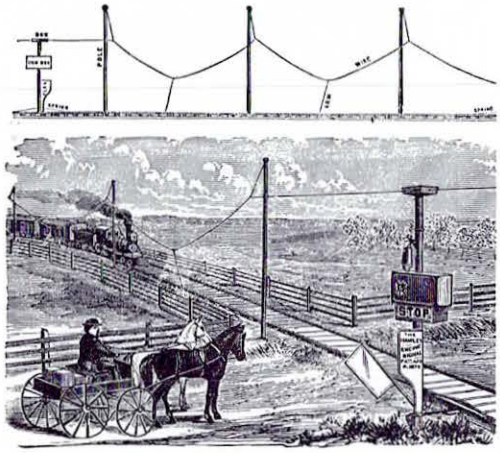

In 1878, most signals were manually operated although this one was activated by the locomotive. (Okonite makes a complete line of signal and control cables)

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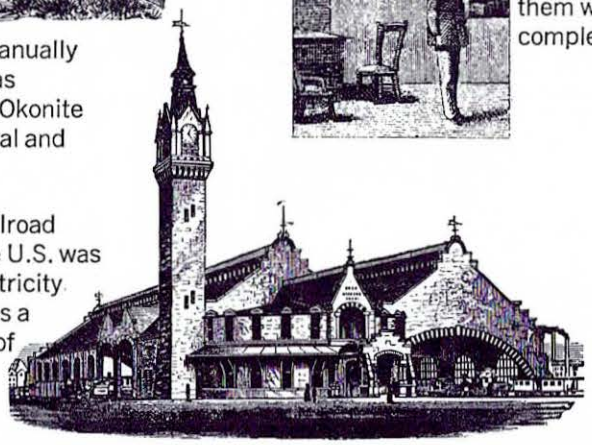

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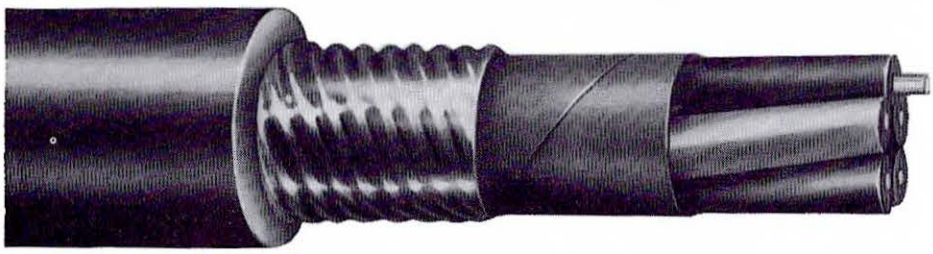

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Save your money

Before you decide to purchase new switching and transfer locomotives, compare the cost of new units with the cost of rebuilding your fleet of ALCO road switchers. A new 1500 HP switching locomotive will cost over $200,000. The ALCO RS3 shown above was rebuilt by John Fox, Master Mechanic in his Toledo, Peoria and Western shop and included an ALCO factory rebuilt 244 engine carrying ALCO's standard warranty. Take advantage of this money saving opportunity to modernize your switching and transfer fleet. Your ALCO salesman will be glad to discuss this with you. Write: Alco Engines Division, Auburn, N.Y. 13021 U.S.A.

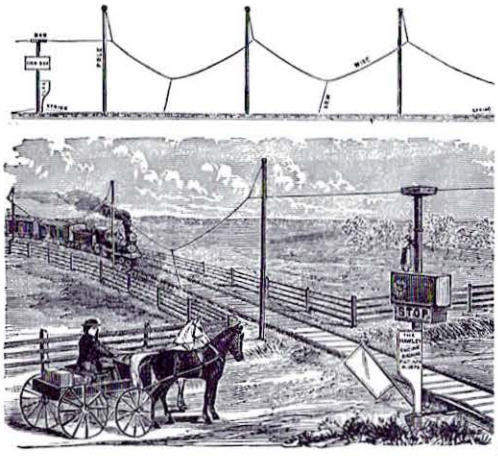
ALCO

Circle 18 on coupon page 61

1870's~1970's

Okonite's been working on the railroad.

In 1878, when The Okonite Company was founded, its first railroad assignment was to supply telegraph wire. That was about the only general use of electricity on the railroads although many others were being considered, studied and experimented with. As the railroads use of electricity expanded, so did Okonite's line of signal, control and power cables to meet the requirements of every application.

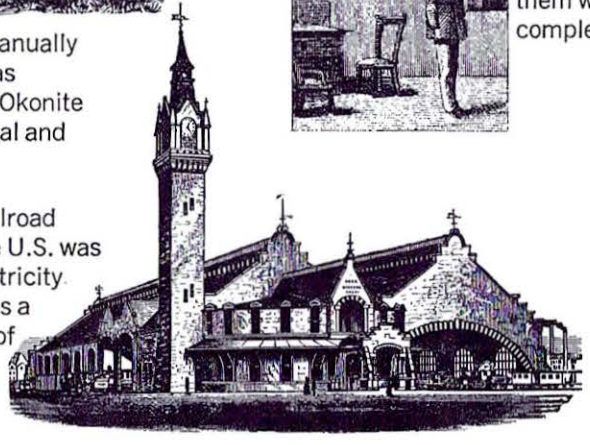


In 1878, most signals were manually operated although this one was activated by the locomotive. (Okonite makes a complete line of signal and control cables)

Okonite-Okoprene-Okoprene Railroad Signal Cable

In 1878, it was news that a railroad was using the telephone, but by the end of the year many of them were. (Okonite makes a complete line of communications cables)

In 1878, no railroad terminal in the U.S. was lighted by electricity. (Okonite makes a complete line of lighting and power cables)



Okonite railroad cables are matched to the electrical, mechanical and environmental conditions of your application. You get the protection and performance you need for tough service—wet locations, heavy mechanical abuse, corrosive atmospheres, etc. Yet, because Okonite offers a variety of cable designs, you don't have to pay for cables that are over-insulated for your needs. The Okonite Company, Ramsey, N. J. 07446

OKONITE

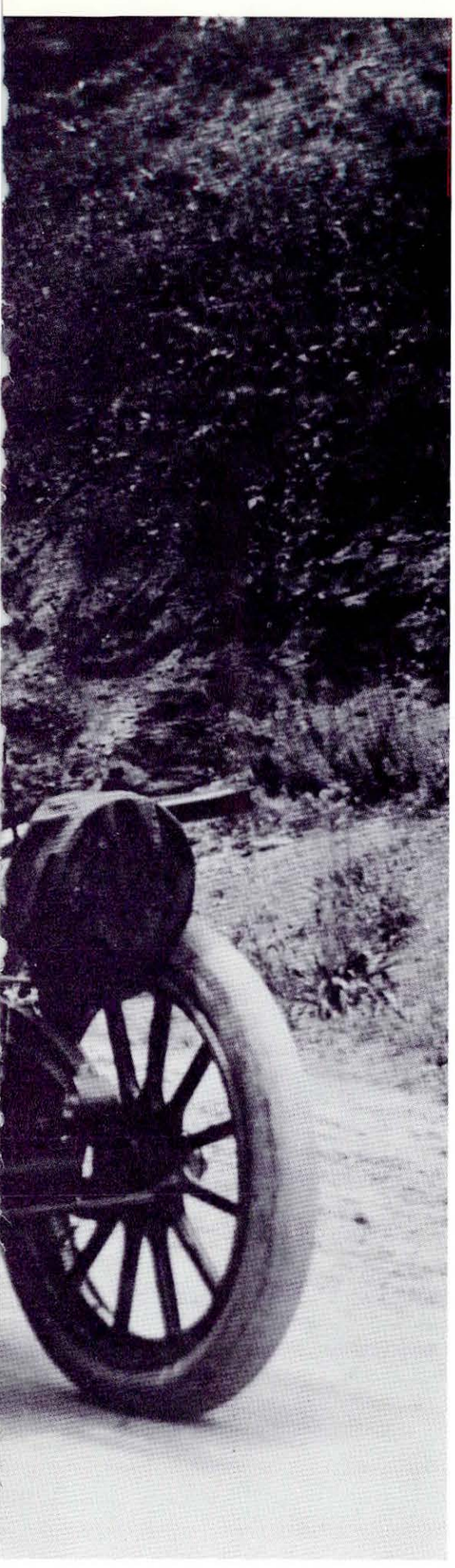
Okonite-Okoprene CMPF-Direct Burial Railroad Signal Cable

OK-434

Since 1878: a job-matched Okonite cable for every railroad need.

Circle 16 on coupon page 61

MBMC
517 2 09



These trail blazers' daughters will groan at the thought of a drive downtown?

For commuters, rail transit will be the coming thing?

You're pulling my leg!

When these four women drove from New York to San Francisco—first of their sex to make it—everything looked like smoother and smoother going for the automobile. For a long time, it was.

Better roads, cars, tires and fuel evolved rapidly. Cars climbed Pike's Peak, survived Death Valley, hit 90 on Daytona Beach.

Was there anything the auto couldn't do?

Yes. It couldn't go downtown in numbers anything like the number of people who wanted to drive there. Streets weren't wide enough, parking lots weren't big enough.

So a third of the city was bulldozed into car-choked streets and parking lots. A third was claimed by filling stations, salesrooms and other facilities of the auto. "Smog" entered the language.

With this, the auto started turning from the American dream into something more like a four-wheeled nightmare.

Outraged San Franciscans stopped a downtown expressway in midair. Boston passed a law against any further highway construction. Dade County officials protested they would need the protection of the National Guard to build another highway into Miami. People in 28 urban areas are studying ways to limit auto use.

Just when things are looking bad for the auto, what should come gliding in on shiny steel tracks to get the auto out of its metropolitan mess but modern rail transit!

Rail transit is an auto's best friend

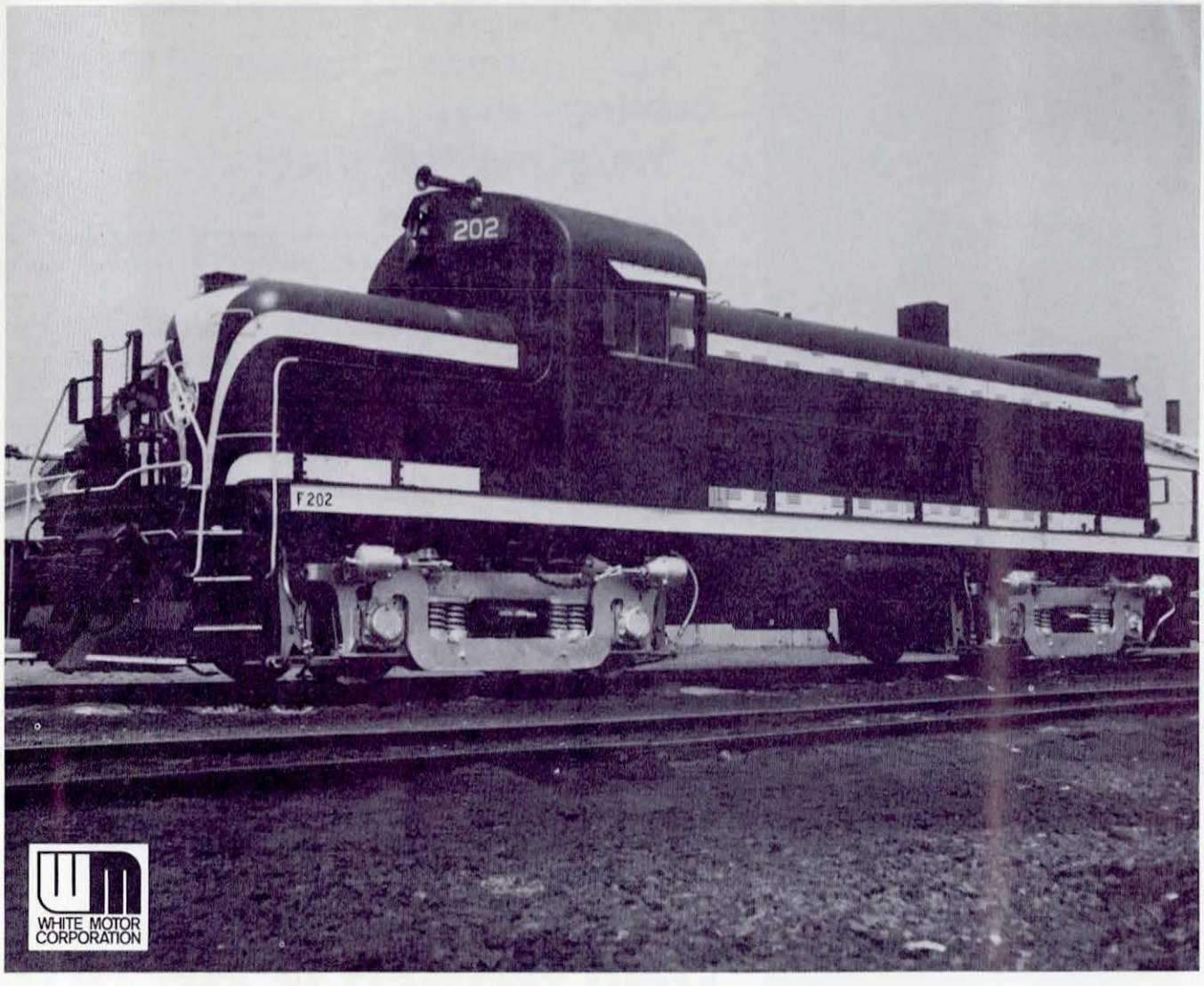
Pioneer systems have been around so long that many people think of rail transit only in terms of old, dated equipment. But there are new systems in Mexico City, Montreal and San Francisco. Other cities are planning new systems and expanding existing lines. Modernized light rail systems are in the works in Boston and San Francisco.

And now it's becoming clear to all of us that rail transit can do what autos cannot. It can bore into the heart of the city with immense numbers of commuters—without an impossible number of cars to be parked, or clouds of poisonous exhaust to be breathed.

America needs the best of both worlds—the auto—and rail transit.

Surface Transportation Systems
BOEING VERTOL COMPANY
P.O. Box 16858, Philadelphia, Pa., 19142

Circle 17 on coupon page 61



Save your money

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ALCO

Circle 18 on coupon page 61

"In-house" pilferage called No. 1 security problem

Cargo theft, which costs the U.S. $1 billion to $2 billion annually, was once regarded as one of those hopelessly uncontrollable costs of doing business.

But, as was stressed by Department of Transportation Secretary Claude S. Brinegar at the third annual National Cargo Security Conference, in Chicago, "The problem is manageable, and theft and pilferage can be reduced—and the feelings of frustration that once accompanied efforts to cope with cargo theft have been replaced by a sense of assurance that with the proper attitudes, tools and techniques, the problem is manageable."

Senator Alan Bible and his Senate Committee on Small Business deserve much of the credit for uncovering the true costs of the national theft problem. Losses in 1970 totaled almost $1.5 billion, the committee determined. Since then, DOT, through the efforts of the Office of Environment, Safety and Consumer Affairs under Assistant Secretary Benjamin O. Davis, Jr., has been studying and analyzing the problem and formulating plans for programs of theft prevention and inventory accountability. The Federal role in these programs, as outlined by Secretary Brinegar, is:

—Since Federal regulatory power has a tendency to become inflexible, autocratic and costly to the taxpayers, Federal cargo security regulations should be considered only as a last resort. Meanwhile, however, Cargo Security Standards to protect property in transit will continue to be issued.

—Participation in pilot projects designed to demonstrate security strategy and anti-theft tactics will continue on a high level, and transporters and trade associations will be encouraged to participate in projects of their own.

—It is proposed that government shippers be encouraged to do business with those carriers who demonstrate an affirmative attitude toward security principles and a record of compliance with Cargo Security Advisory Standards.

"While our Advisory Standards do not carry the badge of regulatory authority," advised Secretary Brinegar, "we do recommend that carriers endeavor to implement them as a pre-condition for future government contracts."

Thus far, three advisory standards have been issued. Five more are scheduled to appear in the next nine months. The first standard—relating to seal accountability—was issued last June. The second—dealing with storage procedures for high-value commodities—was released in August. And the third—on the subject of cargo accountability—was issued about a month ago.

Both Brinegar and Davis feel that, since reductions in cargo claims can mean 25 to 50 cents in extra after-tax profits to the carrier, the carriers should be most willing to comply with the standards. Brinegar told the conference, which was jointly sponsored by DOT and the Transportation Association of America, that he preferred voluntary action over Federal enforcement.

Since transportation is the nation's largest employer, with its annual "bill" exceeding $200 billion—one-fifth of the Gross National Product—it is important that cargo theft be rooted out of this vital segment of the national economy, said Davis. Unfortunately, apathy on the part of management is the Number One problem, with "in-house" pilferage by employees going almost unchecked. Shockingly, 80% to 85% of cargo thefts involve people who have authorized access to the goods.

"There are several terms that should be erased from management's vocabulary," emphasized Davis. "They are 'shortage,' 'non-deliveries,' 'shrinkage,' and 'mysterious disappearances.' These euphemisms could add up to as much as 50% of some company's profits.

"We simply have to blow away the old smoke screen of 'shortage' and call it what it is—theft. The best security devices in the world will not prevent shortage and all the other words unless the front-office determines that there will be accountability," added Davis.

Railroad police are working closely with DOT and other government agencies, especially the FBI, in developing effective programs of theft prevention, said T.D. Fogarty, director of special services for Illinois Central Gulf, another of the conference speakers. He cited the Philadelphia Project, a two-pronged approach concentrating on the initial stages of reporting, investigating and prosecuting cargo theft cases.

Also cited by Fogarty was the Erie Lackawanna's Croxton Yard piggyback terminal program (RA, Sept. 24, p. 37). And, there is the East St. Louis helicopter project in which 14 railroads are involved in cooperative patrolling.

Devices such as a secondary hasp-locking arrangement and other heavy-duty locks have been studied closely by railroad police, added Fogarty. He is hopeful that the new hasp-lock will become a standard on all railroad freight equipment starting in 1974.

On ICG alone, Fogarty continued, intrusion-detection systems are being used to prevent theft and a program has been initiated with several shippers of high-value lading to test self-locking cable seals and door-rail locks.

Far East crossties coming in quantity

Dipterocarpus Grandiflorus isn't exactly a household term—but it may become a familiar one around the railroad industry, what with Lawrence Wood Products of San Francisco gearing up to import a million or more D.G. crossties a month from the Philippines. The ties are manufactured from Apitong, a species of mahogany. And, according to Elliott Lawrence, president of LWP, the wood (1) may be treated with any standard method of preservative treatment, (2) shows in tests that it's 1.7 times as hard as Douglas fir, and (3) "has a 30% longer life expectancy with insignificant signs of checking or splitting to be expected." The hardness of the wood does require that spike holes be pre-bored. In tests a pulling force of 4,523 pounds was required to extract spikes from the wood, says Lawrence. Tests have also shown a high resistance to tie-plate cutting, he adds.

Apitong ties may be furnished in standard sizes or in any size specified by the railroads. In addition to ties of solid wood, the company is prepared to furnish Apitong ties in laminated form, using an epoxy as the adhesive. Laminated bridge stringers and other wood members are also furnished.

Apitong ties have been used on the Manila Railroad for at least 30 years, Lawrence says; they have been going into tracks in France and Germany for several years and are being installed in Canada.

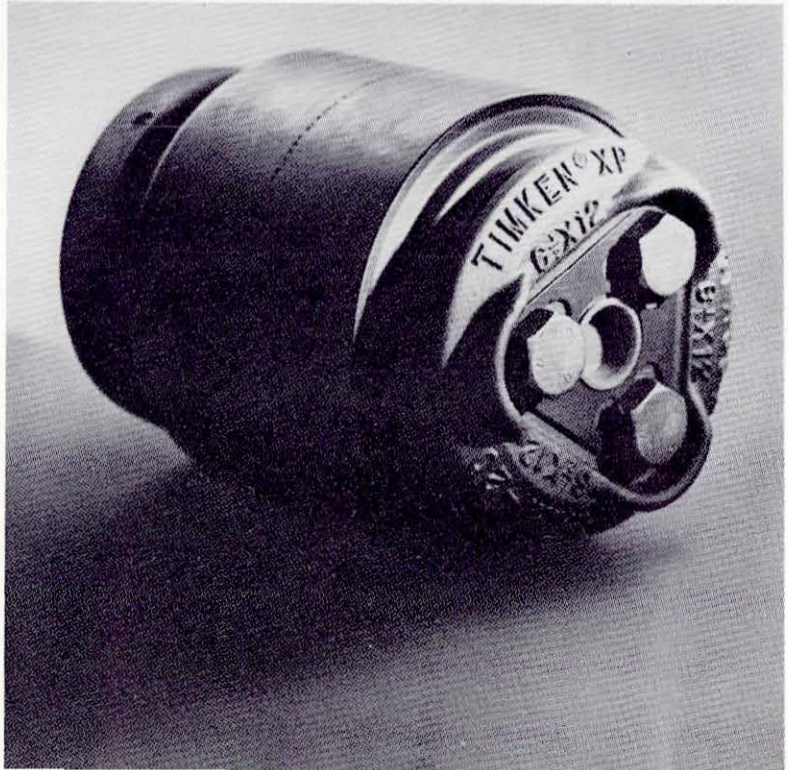
The ties are being produced at processing plants on the islands of Luzon and Palawan. Present capability of the plants is 350,000 to 450,000 ties per month, but an expansion project now in progress will raise the production rate to about 1.5 million ties a month, according to Lawrence.

The company is now prepared to deliver the ties "exdock" at West Coast ports, and preparations are being made to deliver them at Gulf and East Coast ports in the near future.

Lawrence Wood also furnishes car decking and wall panels for box cars and trailers. The panels are available in modules ¾ inch thick, 4 feet wide and 10 feet long, with additional lengths in multiples of 6 inches.

CONGRAT

YOU JUST INVENTED A GREAT NEW 600,000-MILE BEARING.



ULATIONS!

We've just announced the new Timken® "Xtended Performance" railroad bearing.

You helped us invent it.

You told us you wanted lower maintenance costs.

We've designed the "XP" bearing to go without reconditioning or relubrication for 600,000 miles or ten years—whichever comes first.

This means the "XP" could reduce your bearing maintenance costs by as much as $1,000 a car over those 10 years.

You said you wanted reliability.

We've built eleven design improvements into the "XP" bearing to give it added dependability.

So you can worry a little less about costly setouts due to water entering through axle end cap holes or backing rings, loose or missing cap screws and loose seals.

Your needs. Timken Research. Without either, the "XP" bearing might not be here.

The Timken Company, Canton, Ohio 44706.

The company that tapered the bearing can taper your bearing costs.

TIMKEN®
REGISTERED TRADEMARK
TAPERED ROLLER BEARINGS

Circle 19 on coupon page 61

People in the News

Kenneth T. Reed
Chessie

George A. Sandmann
Chessie

John T. Collinson
Chessie

H. Preston Henshaw
Chessie

ASSOCIATION OF AMERICAN RAILROADS.—**Robert V. Poos** has been named news service manager, Washington, D.C. Mr. Poos was formerly press and public information officer, House Committee on Internal Security.

BESSEMBER & LAKE ERIE.—**E.F. Grecco** appointed supervising engineer, Greenville, Pa.

CHESSIE SYSTEM.—**Kenneth T. Reed** and **George A. Sandmann** elected senior vice presidents, Cleveland. **John T. Collinson,** general manager-chief engineer, succeeds Mr. Reed as vice president-operations and maintenance. **H. Preston Henshaw,** assistant vice president-sales, coal department, succeeds Mr. Sandmann as vice president-coal traffic. Messrs. Reed and Sandmann will remain in charge of their respective departments until their scheduled retirements next year.

Thomas P. Hackney, Jr., general manager-mechanical department, named assistant vice president-mechanical, Cleveland. **B.V. Burroughs,** director of tidewater coal traffic, Newport News, Va., succeeds Mr. Henshaw as assistant vice president-coal sales, Cleveland. **James W. Brent,** assistant chief engineer-maintenance, Huntington, W. Va., succeeds Mr. Collinson as chief engineer, Cleveland.

ERIE LACKAWANNA.—**Robert A. Packer,** superintendent, Marion Division, Marion, Ohio, appointed senior director-operations planning, Cleveland. **Michael H. Rozelsky, Jr.,** superintendent-freight, New York Division, Hoboken, N.J., appointed superintendent, Scranton Division, succeeding **J.H. Kithcart,** who replaces Mr. Packer. **J.P. Sipple,** superintendent-passenger, New York Division, Hoboken, appointed superintendent, New York Division. **F.J. Flynn,** passenger trainmaster, Hoboken, appointed assistant superintendent, passenger. **C.R. Wallace,** assistant passenger trainmaster, Hoboken, succeeds Mr. Flynn. **Troy Hardin, Jr.,** inspector of operations, Cleveland, succeeds Mr. Wallace.

FRISCO.—**Donal L. Turkal,** assistant general counsel, named associate general counsel, St. Louis.

R.N. Schmidt named division engineer, Eastern division-East; **D. A. Bell,** Eastern division-North & South; **T.M. Adams,** Eastern division-West, all with headquarters in Springfield, Mo. At Tulsa, Okla., **L.E. Hobbs** appointed division engineer, Southwestern division N-1; **R.P. Wiese,** Southwestern division N-2, and **J.W. Donica,** Southwestern division-South. **G.C. Payne** becomes division engineer, Southern division-North, and **J. Payne,** Southern division-South, both with headquarters at Memphis, Tenn. **G.P. Chandler** appointed engineer of planning and application; **C.V. Holt,** engineer costs; **F.S. Hunter,** engineer of schedule; **L.F. Woodlock,** assistant chief engineer-maintenance; **F.L. Hindman,** office engineer, all at Springfield.

ILLINOIS CENTRAL GULF.—**Don S. Monroe** named general manager, Lakefront Electric Transit division. Mr. Monroe, formerly regional sales manager, **Mainstem, Inc.,** Milwaukee, Wis., will be responsible for all aspects of **ICG's** commuter service.

Ernest S. Irby, assistant treasurer, also named credit manager in connection with the transfer of ICG's credit operations from Chicago to Mobile, Ala. **Daniel P. Higgins,** credit manager, Chicago, appointed assistant to the treasurer. **Ralph B. Spafford,** assistant cashier, advanced to assistant credit manager, Mobile.

Sue Soder named assistant to the manager of the Mechanical Department.

LOUISVILLE & NASHVILLE.—**L.D. Cary,** district sales manager, Chicago, retired recently after more than 35 years of service.

Orris Reynolds, manager, employee relations, Louisville, retired recently after 46 years' service.

G.L. Nichols, manager, industrial engineering, named assistant chief engineer, design and construction, and **C.L. Gatton,** assistant chief engineer, staff, becomes assistant chief engineer, maintenance of way, Louisville.

MILWAUKEE.—**Dennis G. Opacki** named general attorney, Seattle.

PENN CENTRAL.—**Anthony A. Cicenas,** northwest sales manager, Chicago, retired.

ROCK ISLAND.—**Theodore E. Desch** elected chairman and chief executive officer. Mr. Desch, formerly vice chairman and chief executive officer, succeeds **Peter Kiewit** as chairman.

READING.—**B.E. Rice, Jr.,** director personnel and labor relations, Philadelphia, appointed assistant vice president-personnel and labor relations, **J.A. Brennan, Jr.,** assistant to vice president-finance, appointed assistant vice president-finance.

SEABOARD COAST LINE.—**William E. Satterwhite,** superintendent of terminals, Miami, Fla., named superintendent, Savannah Division, Savannah, Ga.

SEABOARD COAST LINE—LOUISVILLE & NASHVILLE.—**Charles R. Yates,** vice president-finance, Atlanta, Ga., retired Oct. 1 to accept the presidency of the Atlanta Arts Alliance, a full-time responsibility.

F.R. Edwards, Jr., appointed district sales manager, Jacksonville, Fla., to succeed **C.W. Johnson,** retired after more than 31 years of service. **T.M. Mitchell** appointed manager, customer service center, Birmingham, Ala.

K.E. Skillman, district sales manager, Buffalo, N.Y., and **R.F. Bell,** district sales manager, Anniston, Ala., retired after more than 35 and 41 years of service, respectively.

SOUTHERN PACIFIC.—**Robert C. Hudson,** general traffic manager, San Francisco, named assistant vice president-traffic there.

H.N. Fodness appointed assistant controller-corporate taxes and **D.C. Thompson** named assistant controller-corporate accounting.

UNION PACIFIC.—**Leo R. Tierney,** assistant fire and sanitary engineer, appointed fire and sanitary engineer, Omaha.

WESTERN RAILROAD ASSOCIATION.—**Robert F. Moriarty,** assistant manager-operations, Services Division, appointed manager of that division.

TRANSIT

John E. Hirten has been appointed deputy administrator, **Urban Mass Transportation Administration, Department of Transportation,** Washington, D.C. Mr. Hirten has served as special assistant to the Secretary of Transportation since April.

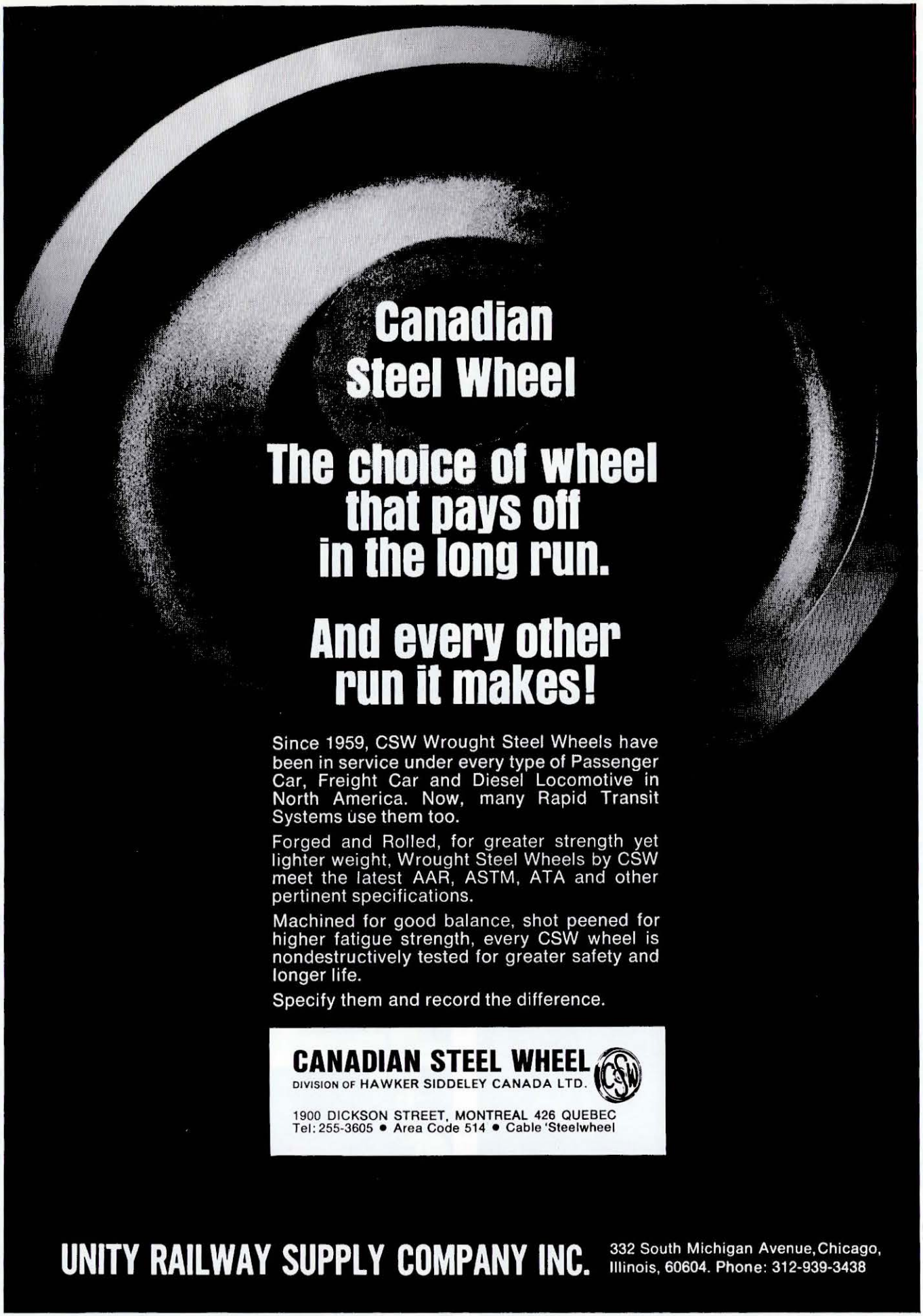
Administrator **Frank C. Herringer** has announced reorganization of UMTA. **Robert H. McManus** will head the new office of Transit Planning as acting associate administrator. **John Paul Jones** will head the new office of Transit Management as acting director. **Jerome C. Premo** has been named acting associate administrator, office of Capital Assistance (formerly office of Program Operations). The office of Research, Development and Demonstration, headed by **Dr. Robert Hemmes,** has been redesignated the office of Research and Development.

Joseph B. Burns has been appointed to head the **Connecticut Department of Transportation,** effective Oct. 10. Mr. Burns has been chief executive, Commission on Special Revenue, since its inception in the Fall of 1971. He organized and has directed the State Lottery.

OBITUARY

J.A. Bellman, director of administrative systems and procedures, **Frisco,** Springfield, Mo., died Sept. 10.

Allen W. Brown, 44, manager of employment and training, **Rock Island,** died Sept. 1.


Canadian
Steel Wheel
The choice of wheel
that pays off
in the long run.
And every other
run it makes!
Since 1959, CSW Wrought Steel Wheels have been in service under every type of Passenger Car, Freight Car and Diesel Locomotive in North America. Now, many Rapid Transit Systems use them too.
Forged and Rolled, for greater strength yet lighter weight, Wrought Steel Wheels by CSW meet the latest AAR, ASTM, ATA and other pertinent specifications.
Machined for good balance, shot peened for higher fatigue strength, every CSW wheel is nondestructively tested for greater safety and longer life.
Specify them and record the difference.
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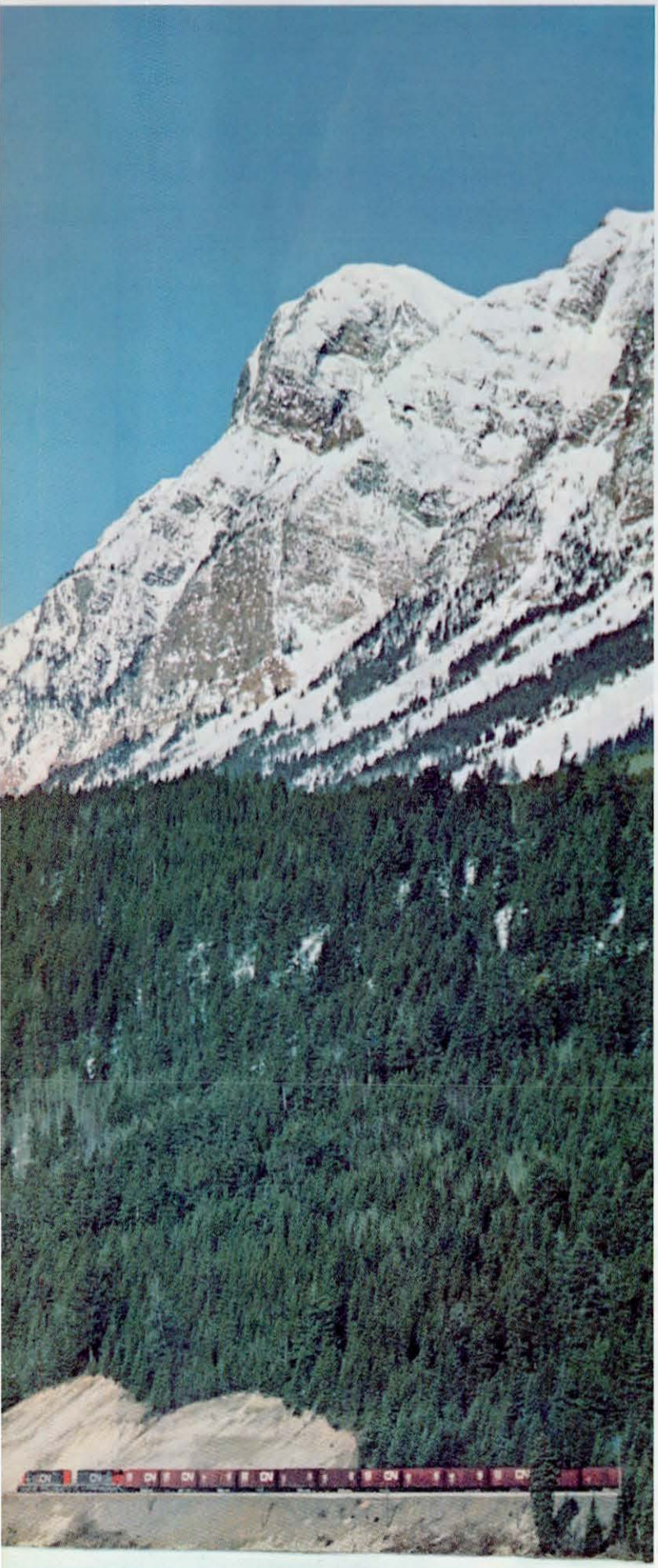
UNITY RAILWAY SUPPLY COMPANY INC.
332 South Michigan Avenue, Chicago, Illinois, 60604. Phone: 312-939-3438

Circle 20 on coupon page 61

Beautiful country. Tough railroading.



But under control. WABCO control.

It's part of the run between Jasper and Vancouver on the Canadian National.

A 1968 study showed that traffic through the area would increase 80% by 1974. To meet operating demands, WABCO developed "System 600," a programmable centralized traffic control system to handle it.

"System 600"

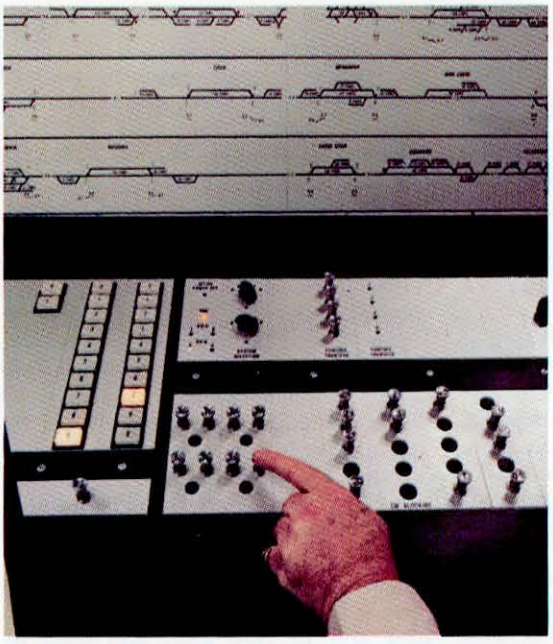
"System 600" is designed to process large quantities of information, giving you the complete operating picture. It interrogates remote and close-in stations, validates control functions and displays field conditions such as train locations and switch and signal positions.

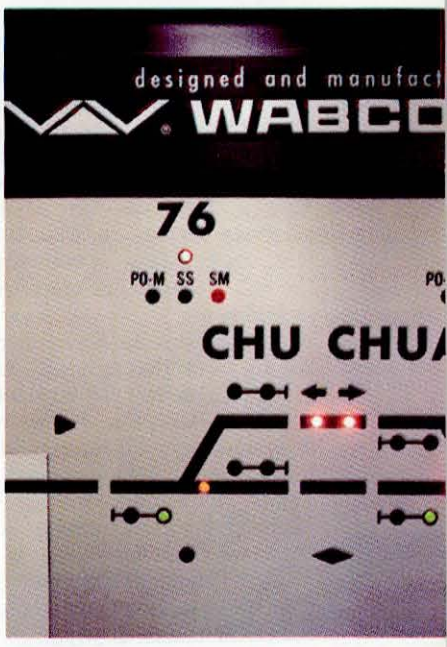
The integrated circuit system requires minimum application engineering and is low in cost. It is also reliable and very easy to maintain.

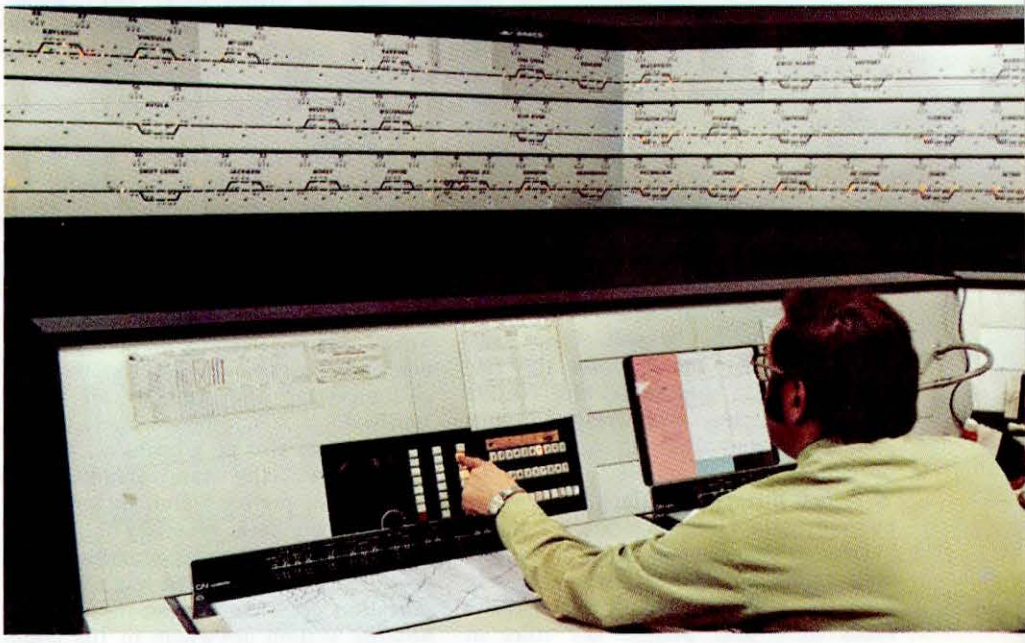
Integrated

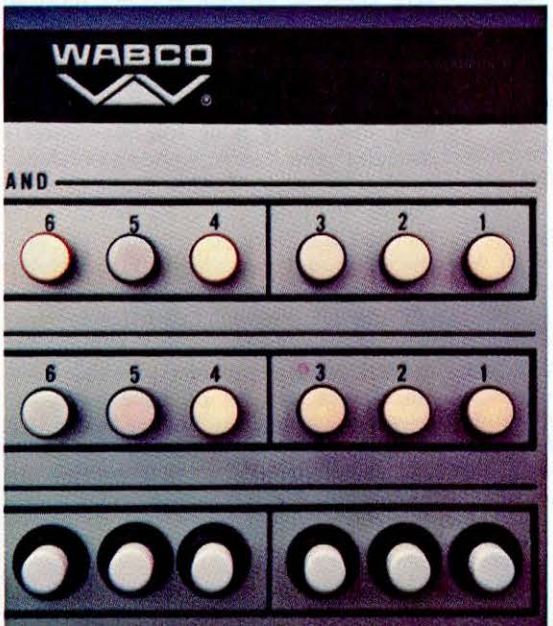
"System 600" is the kind of totally integrated system that meets today's railroad operating requirements. Expansion of the system is inexpensive because it has an expandable memory core and software programming that reduces hardware and wiring changes to a minimum.

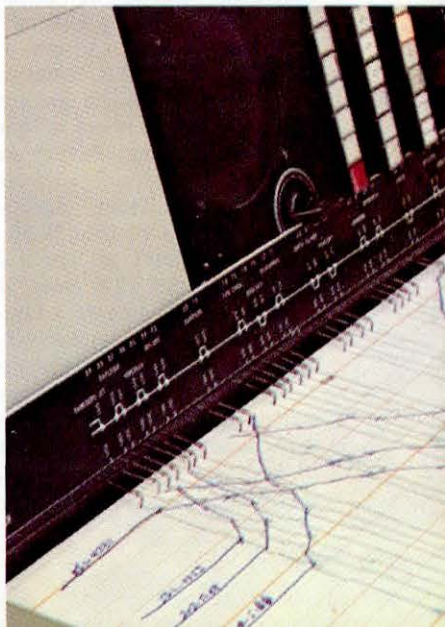
The WABCO "System 600" can be applied to situations that require acquisition from, and control of, remote applications including interfacing directly with existing relay code systems. If you'd like more information about it, write: WABCO Transportation Systems Group, Union Switch & Signal Division, Westinghouse Air Brake Company, Pittsburgh, Pa. 15218.











TRANSPORTATION FROM THE WORD GO
The WABCO Transportation Systems Group is: Union Switch & Signal Division, Westinghouse Air Brake Division, WABCO Ltd., Cardwell Westinghouse Company, Fresinbra Industrial, S.A. In Transportation, WABCO is also 17 European operations and licensees and agents throughout the world.

WABCO

An American-Standard Company

Circle 21 on coupon page 61

Modular housing units move swiftly

If the modular-housing industry really does move into the boom-times projected for it, the railroad industry will without much doubt play a major role in the logistics of the business. Reason: Railroads have already proved they can do the job. Case in point: The H.B. Zachry firm at San Antonio, and the rail moves it has made over the past several years.

It was back in November 1971 that Zachry and the railroads first got together, to deliver 70 concrete modules to Winter Park, Fla., where they became a seven-story, 70-room addition to a hotel. That 35-car shipment went from Texas to Florida in four days, via Missouri Pacific/Louisville & Nashville/Seaboard Coast Line.

Even more impressive—though the distance was less—was a movement of four unit trains of modular units from the Zachry plant to Dallas, where the modules were used in construction of an apartment complex. Those four 40-car trains were routed MoPac/Santa Fe.

And the verdict in both cases? Railroads proved they could get the outsize shipments to destination expeditiously—and in good condition. Says Lon L. Nusom, director of transportation for Zachry: "Inspections at destination showed absolutely no damage whatsoever that could be attributed to rail handling." Will Zachry continue to use rail? You bet it will. There have been no other moves since the San Antonio/Dallas shipments, but, Nusom says, his company is enjoying a "pretty good year," and other rail shipments are projected.

● **A few differences.** Zachry is not, of course, the only modular-housing builder to ship by rail, nor is MoPac the only railroad that has worked closely with the builders. A number of other roads have also played key roles in successful moves of housing units—among them, Penn Central, Southern, Erie Lackawanna, Union Pacific and Western Pacific. But, there are a couple of features about the Zachry operation that are unusual, if not unique.

For one thing, Zachry has become the first "outsider" to lease flat cars from Trailer Train. Zachry's "fleet" consists of 40 85-foot G-85 flats—and, while they don't get the utilization of the rest of the TTX fleet, they do the job admirably when called upon.

The cars' load-securement devices are also just a bit out of the ordinary. As Nusom points out, when his company started looking into rail transportation, there wasn't much to go on in the way of available technology for tieing-down reinforced concrete housing modules. So, Zachry's design engineers, working with MoPac and TTX, developed their own tiedown system. It's relatively lightweight. It holds the load securely and lets it get a damage-free ride. And for the empty return move of the cars, its components can be adjusted so that the empty is within Plate C and can be returned to the plant in regular train service.

So far as Zachry is concerned, the range for rail shipments is 100 miles and farther—though rail might be used for distances under 100 miles if, for example, there's a suitable rail siding right at the construction site. "Suitable," however, means more than just having a track in place. Zachry's steel-reinforced units, with their five-inch-thick walls, come in two sizes—13 feet wide by 9 feet, 5/8-inch high by 29 feet, 8 inches long; and the same width and height by 32 feet, 8 inches long. They weigh, respectively, 60,000 and 64,000 pounds. And the ground surface at the offloading site has to be of sufficient density to hold those loads in suspension on a crane.

● **No high-wide problem?** Rail clearances, of course, can be a problem—but perhaps not so big a problem as might be imagined. Over the past year, for example, Nusom says he looked into clearances from San Antonio to destinations in Florida, Virginia, Delaware, Texas, Idaho, Washington and California—and was able to get the required clearances all the way to all points involved.

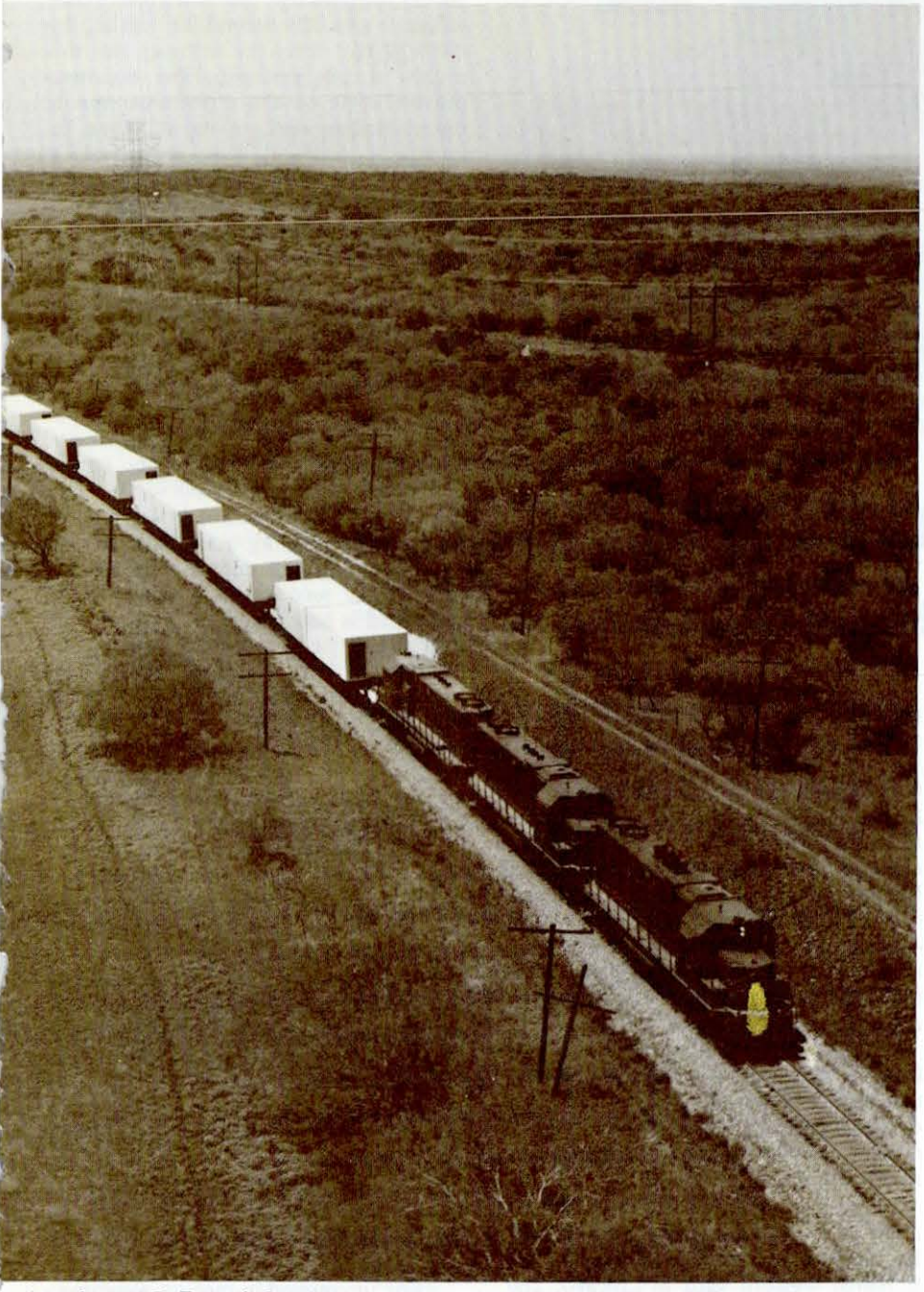
Rates can also be a problem. Nusom characterizes the rate structure as "maybe not perfect." But, he indicates, the company feels generally that it has the capability from a standpoint of economics—which would include transportation costs—to market its modular-housing system anywhere in the country. There is, though, another facet to the rate problem, and that's the difference in rates between concrete modules and those made of other materials. Carriers, Nusom says, have a considerably lower rate scale for non-concrete modules—and "we're working on that."

For its part, Trailer Train says its "offer to lease flat cars to modular builders has been in conjunction with the railroads' over-all effort to develop the movement of housing modules as a rail market. Beyond our offer to lease cars to the builders, our engineering department has provided valuable assistance to a number of builders on tiedown devices for the flat car best suited to their particular module. The rather ingenious tiedown devices on the 40 Trailer Train cars that Zachry has under lease is a prime example: Zachry engineers designed the basic tiedown system and then drew upon the experience of Trailer Train engineers to make refinements. The result has been a system that has successfully moved hundreds of Zachry modules with zero damage."

BIGGEST RAIL MOVEMENT of concrete housing

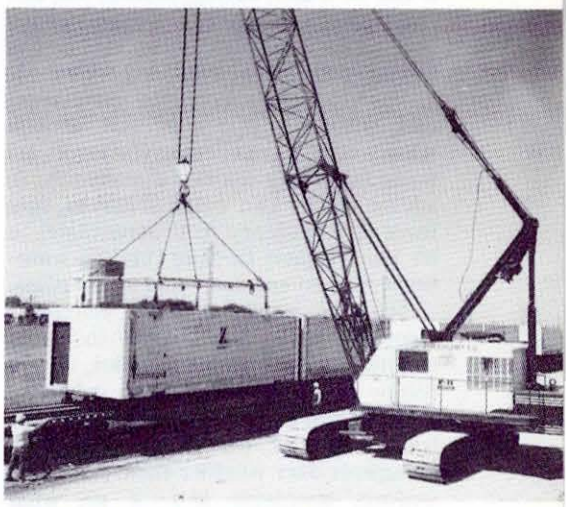
● **What potential?** How big is the market for what Zachry and its competitors are producing? Generally, the market has not developed as rapidly as some thought it would, and there have been some failures along the way. But there are positive signs that modular housing

and safely by rail



modules from H.B. Zachry's San Antonio plant has been four unit trains of 40 cars each.

ZACHRY-DESIGNED tiedown system applied to Trailer Train cars is relatively light-weight. Housing modules suffered no damage attributable to rail handling.



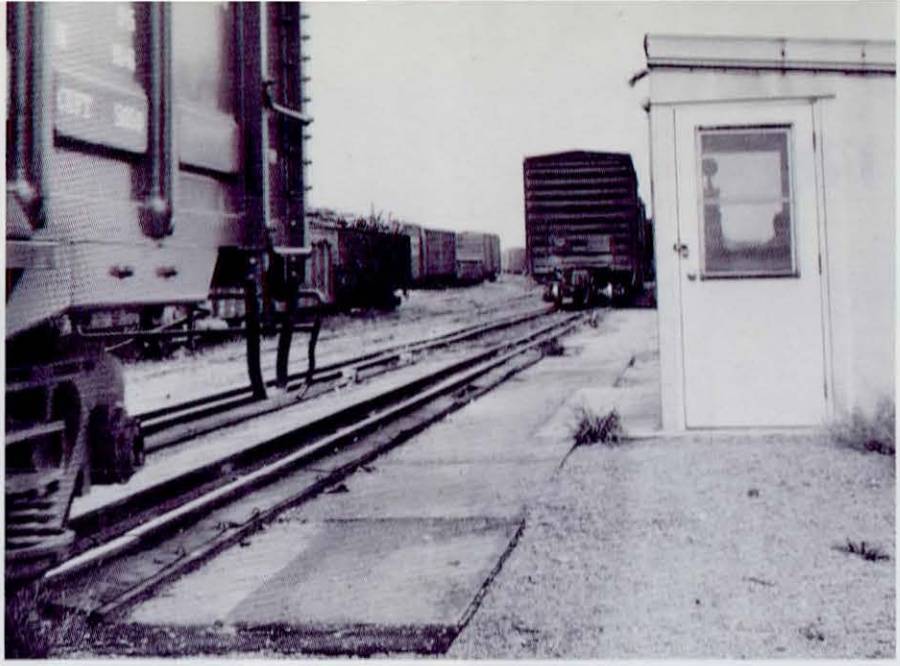
UNITS UNLOAD at Santa Fe Dallas yard.

will someday have that great future predicted for it. Zachry itself has no doubts about what's ahead—in part because the costs of conventional construction are high and climbing. As Nusom puts it, it used to be that concrete-module construction was higher-cost on anything up to two- or three-story structures. Now, costs are about even on such low structures, and things are rapidly coming to the point where Zachry will be lower-cost on quality construction than conventional builders.

As for "how high is up?" Nusom says his company's system now permits going as high as 43 stories without a single beam or column. The real limitation, as it turns out, is the lifting equipment available.

Who uses concrete modules? Well, the first rail move was units for a hotel, the second was modules for an apartment complex. Zachry is providing modules for construction of a hospital, Metropolitan General in San Antonio. And quite soon it is expecting to be building the modules for what may be the first concrete-module jailhouse.

As for transportation, when the modular-housing boom comes, a lot of people are aware of the alternative to rail shipment—which is, as one worrier notes, "large convoys of extra-wide trucks creating all sorts of hazards on the highways." That may be one reason why Zachry is, in Nusom's words, "still deep in research and development work in transportation. We're modifying and steadily improving the system—with each shipment serving as a rolling laboratory." ■



ELECTRONIC-RECORDING CONVERSION EQUIPMENT, added to a conventional mechanical scale, permits fast motion weighing at relatively low cost.

Now, weigh your car in about 20 seconds

The weighing of freight cars is a vital part of railroad operations. But, when it's done by the old mechanical method, it can be a dull, boring, tedious job, and sometimes a costly one. Human errors can creep in: With short scales and longer cars often requiring two-draft static weighing, maybe the crew spots cars with too many or not enough wheels on the scale, or maybe errors are made (and they are not uncommon) in adding up the two weights. Maybe, too, there is a tendency to procrastinate, to let the weighers sit—and this can sometimes lead to car delay and to overtime.

Motion weighing and electronic recording have long seemed to be an answer to the problems. But, for a couple of reasons, these advances haven't caught on as they might have been expected to. There have been arguments over whether there should be uniform standards and, if so, what standards. And, motion-weighing installations—built from scratch—are both high-cost and relatively-permanent installations.

Now, however, motion weighing may be coming into its own. Standards have in fact finally been approved. And the pioneer in coupled-in-motion weighing, Railweight, Inc., has developed a way to tie the electronic-recording concept to the mechanical scale.

● **Minutes vs seconds.** Time savings are impressive. By Railweight's checks, static-weighing time will run three to four minutes per car. Use of the same mechanical scale but with the electronic recording apparatus attached will permit motion weighing at a rate of about 20 seconds per car, or three cars a minute. Cost savings are also substantial. Installation of a Mark I recorder, Railweight estimates, will cost only one-fourth to one-third as much as installation of a brand-new coupled-in-motion scale and system. And, while the Mark I provides only for uncoupled-in-motion weighing, it would seem likely that coupled-in-motion capability will eventually be available.

The market for conversions is not insignificant, adding up to about 6,000 mechanical scales—a few government-operated and all the rest about evenly divided between railroad-owned and customer-owned.

Currently, Railweight has a Mark I installed in conjunction with a years-old Fairbanks mechanical scale at a Chicago & North Western yard in Chicago. The scale is a 50-foot, four-section unit; the recorder is a multi-draft, uncoupled-in-motion unit. As each car is kicked across the scale, weights are separately calculated for leading and trailing trucks and the total gross weight is printed out.

In this installation, a 5,000-pound-capacity tension load cell was inserted in a new steel yard rod, providing a direct measure of the tension in the road when a load is applied. The multiple of the mechanical scale is 400-to-1, so that a load of 300,000 pounds will place a maximum tension force in the load cell of 750 pounds. Dead load of the levers, approximately 1,000 pounds, also has to be taken into account, so in actual practice the load applied to the cell is 1,000 pounds plus a working load of up to about 750 pounds.

● **Counters provide logic.** Four mechanical wheel counters were installed on the weighbridge platform, one at the entrance gap, the second 12 feet in, the third 12 feet from the exit gap and the fourth at the exit gap. The counters provide logic to the digital counter in the recording unit, telling it when to initiate a read and when to provide a gate opening to the decade counters to sample the pulse stream coming from the oscillator which is taking in the amplified load-cell signal. At the conclusion of the gate openings, a secondary routine measures whether the car being weighed is moving across the scale at the proper speed—which, in the case of the C&NW installation, is a speed of up to 9 mph. Also at the conclusion of a gate opening, the digital counter provides logic which will identify the first truck, accept the gross weight calculation for it and store it. The same process takes place on the trailing truck, the weights are added together and, at the conclusion of the second truck read, a print command is issued and the gross weight is stamped on the scale ticket.

Railweight is optimistic about the potential. As President S.H. Levinson puts it, "It does seem likely that the conversion-unit concept will enable railroads and industrial weighers to get into the electronic age without long delays and without concern about misapplication of investment funds. The ability to move systems from one location to another in the event traffic patterns change reduces the risk, on a scale from 1-to-100 from perhaps 80 to perhaps 5 or 6. This should be of substantial service. This should relieve price-squeeze problems, help to free-up rolling stock in short supply and help to relieve yard congestion in many areas."

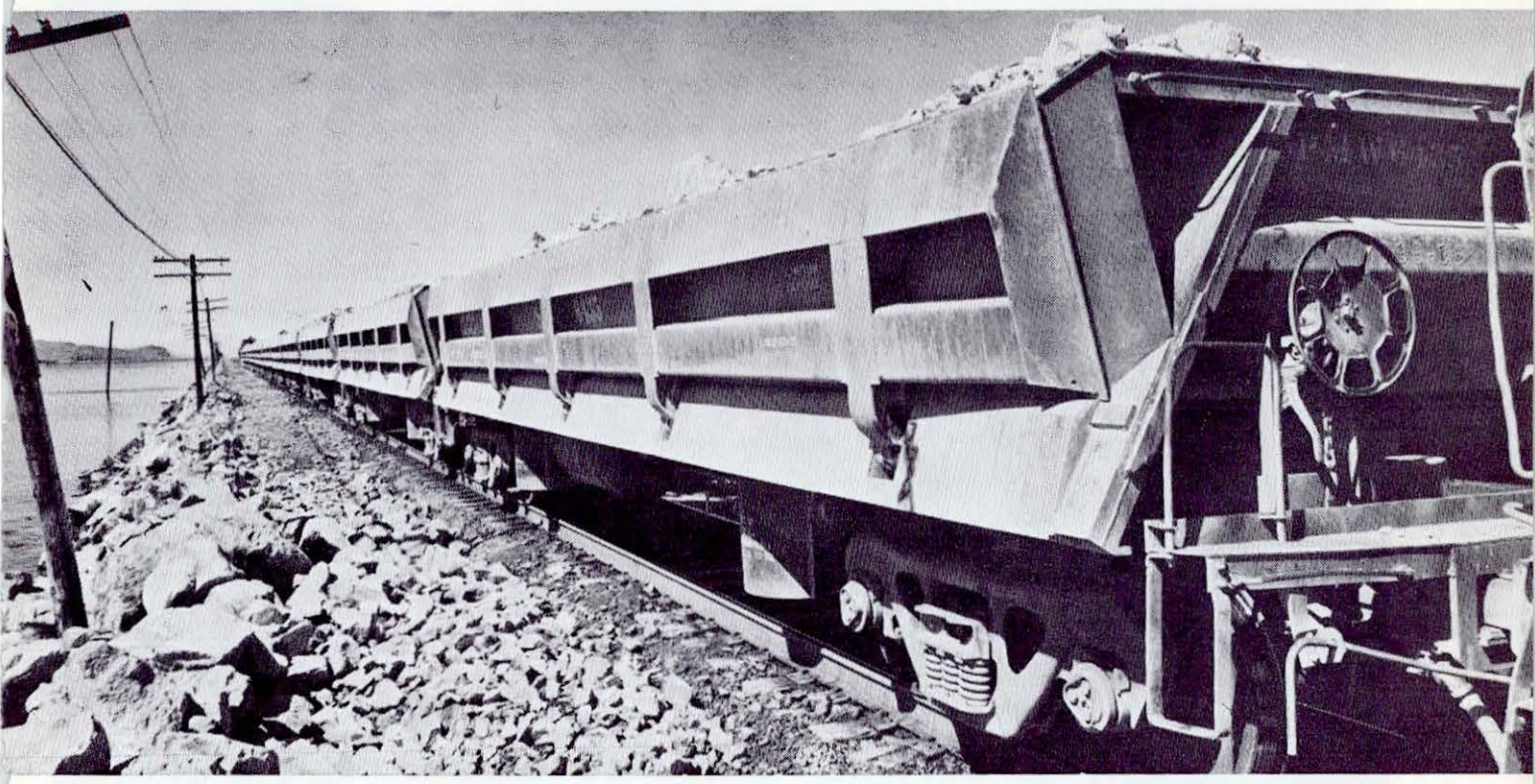
● **Standards set.** Meanwhile, the approval of motion-weighing standards may also give impetus to domestic installation of additional electronic-type units.

Basically, the standards provide these tolerances:

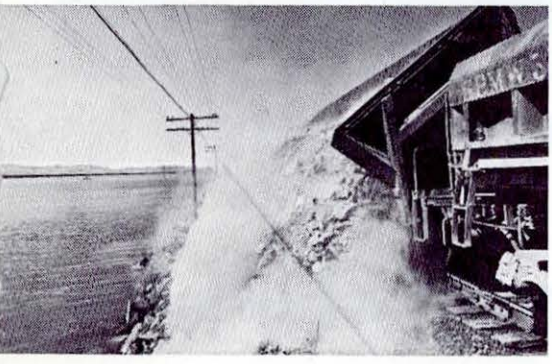
—For uncoupled-in-motion weighing, variation between static and motion weights recorded shall not exceed 0.2% plus one-half of the smallest operating readout value of the scale.

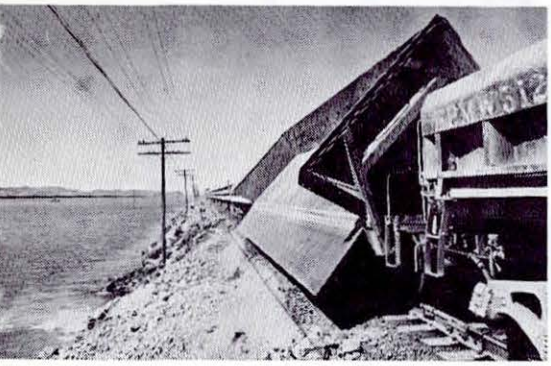
—For coupled-in-motion weighing, it is recommended that a test train of 10 cars be used and that the train be moved over the scale until 100 motion weights are obtained. In this test, the sum of the static vs the sum of the motion gross weights may not vary by more than 0.2%. On individual car weights, based on 100 readouts, variations may not exceed 0.2% on 70 cars, 0.3% on 10 cars, 0.4% on 10 cars, 0.5% on five cars and 1% on five cars. ■

DIFCO DUMP CARS



CUT RIP-RAP COSTS





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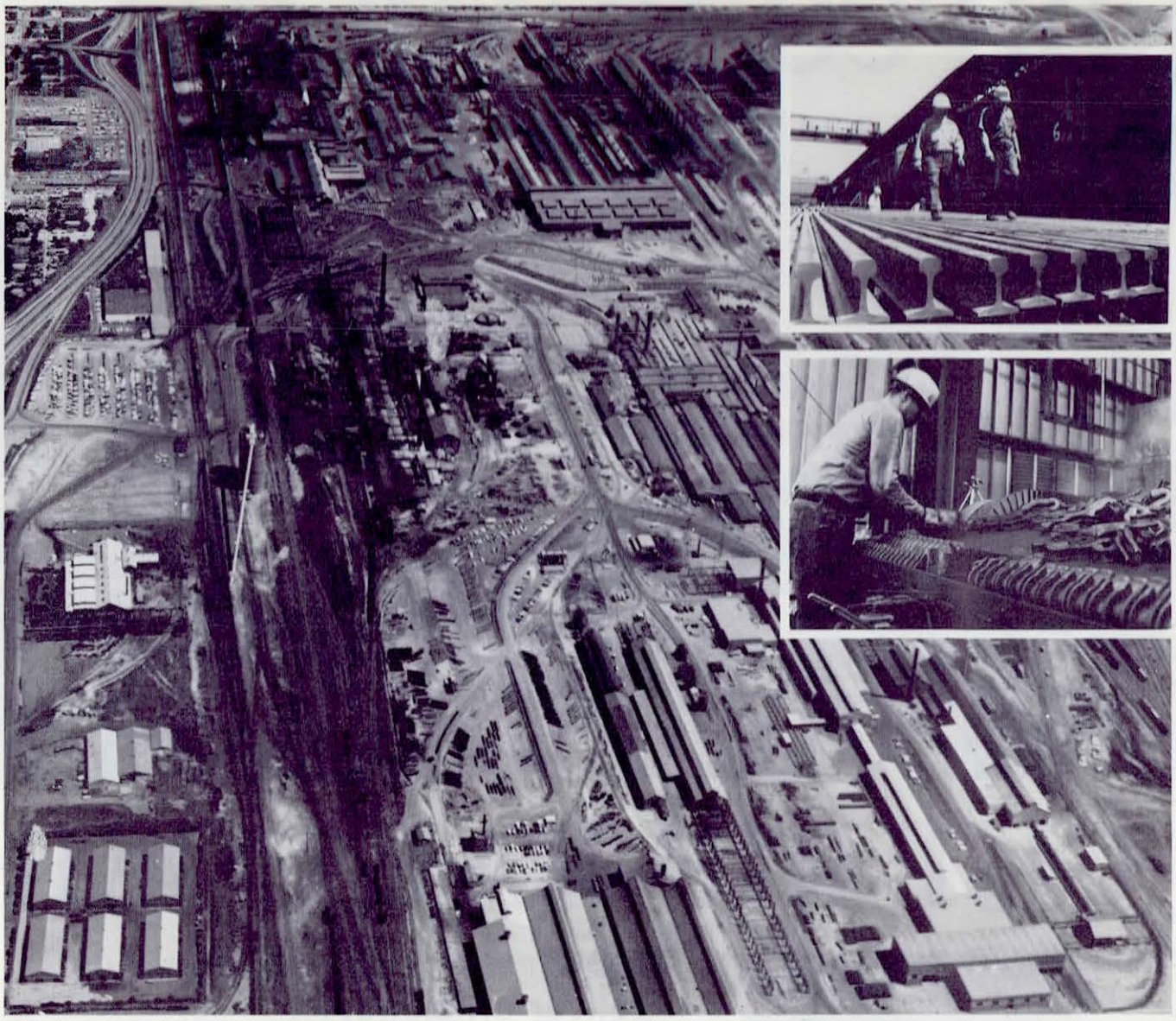

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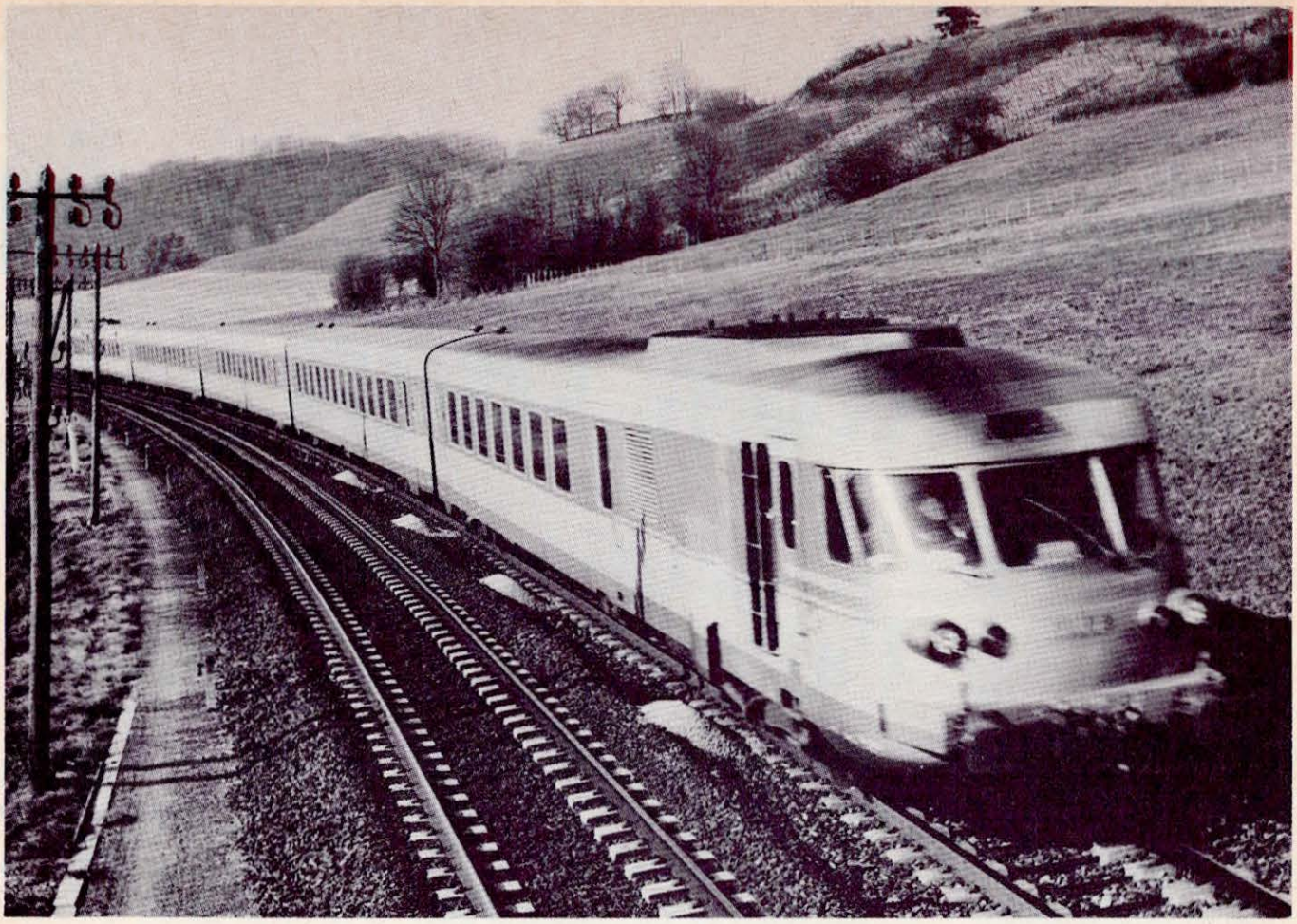

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On February 28, 1973 Amtrak contracted with ANF-FRANGECO Paris for delivery of two of the latest Turbo-powered trainsets: the "RTG". They are destined for the Chicago-Milwaukee and Chicago-St. Louis runs.

ANF-FRANGECO built the ETG and RTG gas turbine trainsets for SNCF-French National Railways. ETG trains have already totalled over 5 million miles on the regular Paris-Caen and Paris-Cherbourg service during the past two years.

By courtesy of the SNCF two trains of the current completely air-conditioned five-car RTG production series will be released to Amtrak during Summer 1973.

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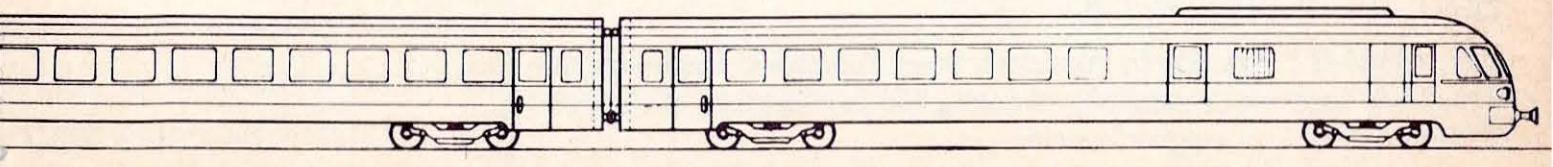

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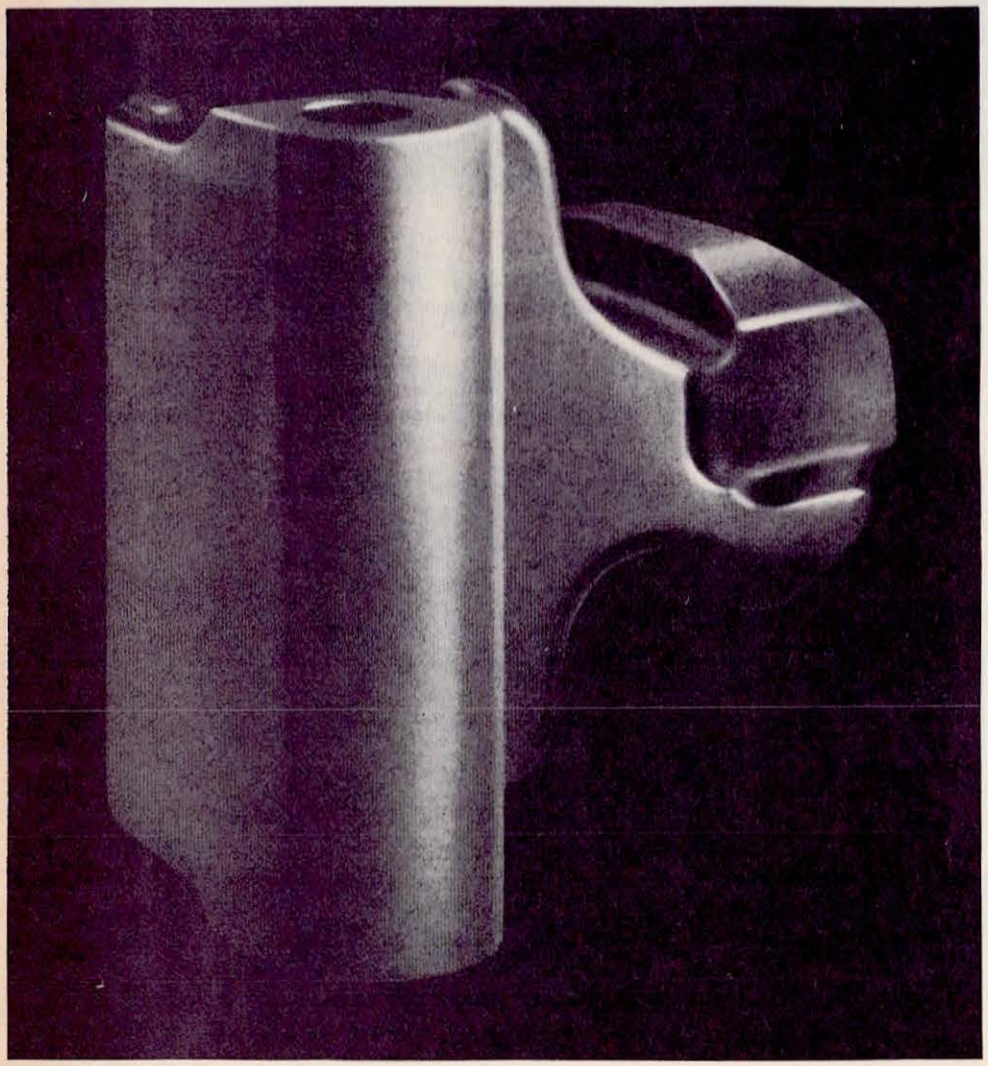

RS5-HT KNUCKLE

New RS5-HT Knuckle by American Steel Foundries. Engineers designed this improved product by changing the face contour of the conventional freight car coupler knuckle.

Dateline, Chicago: Ameri can Steel Foundries, a pionee in the railway supply indus try, announced a newly im proved coupler knuckl today. It will be known as th RS5-HT Knuckle.

This new developmen helps to reduce the slack, sub stantially, on any freigh train. This is true even if only one RS5-HT is paired with a conventional couple knuckle.

ASF Engineers accom plished this significant im provement just by changing the surface contour of the standard AAR Knuckle. The leadership of this company in the coupler field is indicated by the many patents granted to it over a period of 70 years

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The chart appearing below was prepared to highlight the new RS5-HT's rate of improvement. ASF Engineers have thoroughly checked the practicality of this new design. A close look at this chart shows the many advantages of this concept. Without any increase in cost, it appears that this new knuckle will change the buying practices on American railroads.

For more information, ASF's sales offices in Chicago, Baltimore, Philadelphia, St. Louis, or San Francisco will be pleased to help.

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E50 and E50	$2\frac{5}{32}$"	BASE
E50 and RS5	$\frac{5}{8}$"	20%
RS5 and RS5	$\frac{5}{8}$"	20%
F51 and E50	$\frac{35}{64}$"	BASE
F51 and RS5	$\frac{3}{8}$"	28.5%
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Are track men awaiting word from management?

that if there is no written report of switch and track-crossing inspections, these inspections are not being made."

A suggestion was made for indicating that switches and railroad crossings have been inspected. It is sufficient to satisfy the requirements, said English, if a notation is made on the bottom of the daily track inspection report saying that all turnouts and crossing diamonds between Mile Post 1 and Mile Post 2 were walked on a particular day, "as long as it is at the required frequency, that defects are shown, and the proper action is taken."

● **Case of the "lost" ten miles.** Federal inspectors are also finding while checking inspection reports that sections of main tracks are not being inspected at all, according to English. In some cases this seems to result from a lack of communication. He cited an example that was brought to the attention of a division engineer when an FRA inspector, while checking inspection records, found a 10-mile section of a main track that had not been inspected for a period of three months. This occurred when two railroad track inspectors misunderstood instructions as to what were the limits of their respective territories. During the three-month period, one inspector inspected track up to Mile Post 230; the other, coming from the opposite direction, stopped at Mile Post 240, thus leaving 10 miles of uninspected track.

● **No regular inspections.** Such incidents are not the only shortcoming in railroad inspection practices, according to English. "In other cases it seems to be a lack of formal inspection procedures," he said. "Federal inspectors have found on some properties that inspections are not being made on a regular basis. Weeks, even months, may pass between maintrack inspections."

The reporting of defects found when making track inspections was another area discussed by English. The standards require, he noted, that "any and all deviations from the standards be shown on the inspection report."

How these defects are reported, he said, is an area that has come under close observation. "The defects should be specific; details should be given. I know what is going through your mind: To comply with what I have said, the inspector would be required to do a lot more paperwork. Nothing could be further from the truth—and to prove my point, let me give you several actual examples of defects reported by some of your own inspectors. I quote: 'The crossing diamond at Tower X is very, very bad, and getting worse.' Wouldn't it have been much better to say: 'The crossing diamond at Tower C is three inches low," English suggested.

"Another example, and I quote: 'A very bad low spot at Mile Post Y.' Again it would be much better to say: 'Mile Post Y, a joint three inches low.'

"Using specifics rather than adjectives gives both you and the FRA a better indication of actual field conditions."

● **Reporting remedial action.** Although the standards require that the corrective action taken be shown on the inspection report, "our inspectors are finding that in many cases this requirement is not being met," said English. "On numerous reports reviewed, no remedial action is being noted at all. Even if the railroad track inspector makes the repairs himself, the defects should be shown and it should be noted that the repairs have been made."

What must be done

"The notation 'told the roadmaster' is not sufficient for the remedial-action requirement of the Federal Track Safety Standards. The railroad inspector, when finding a deviation from the Federal standards, must either repair it himself, have it repaired by others before the next train operates over that section, slow-order the track so that the condition falls within the requirements for that class of track, or, last but not least, remove the track from service."

● **Those suspicious of non-defects.** A situation that attracts the attention of the FRA, according to English, is the finding on some railroads that "no defects are being reported day after day, week after week. Defects do occur—even on the many thousands of miles of well-maintained track we have in this country. The locations where we find this condition existing are excellent places for the FRA track inspector to make an on-the-ground inspection. I might mention that even at locations where inspection procedures and written records are good, periodic field inspections are being made.

"These on-the-ground inspections may only be a spot check involving a mile or two of mainline, a walk through an interlocker, or a spot check of several yard tracks. This inspection will be expanded to cover longer distances if it is revealed that many unrepaired defects exist, or that defects are noted that are not on the written inspection report. On some of these on-the-ground inspections, we have discovered many serious conditions are not being reported, nor repaired."

● **Uninformed track inspectors.** Another surprising finding revealed by English is that "many railroad track inspectors are not aware of the requirements of the track standards." Also, he said, "some of these people have never seen a copy of these standards. Others have not had their responsibilities explained to them."

Apparently, at least some of these shortcomings apply to the reporting of rail defects. Reports of such defects, according to English, must show the location and nature of any rail defect found through internal inspection, and the remedial action taken. But, the FRA's inspectors have found that many of these rail inspection reports do not indicate the size of the defect. "This makes it impossible," said English, "for not only the Federal inspector, but also railroad personnel, to know what remedial action is required under the standards.

"Notations indicating when the defective rail was removed from track is an area that at times is overlooked by some of the railroads. This, along with the slow-order information, is an important requirement in complying with the standards. One very disturbing fact uncovered by our inspectors is that many railroad employees connected with the rail-inspection programs are unfamiliar with the requirements of the Federal standards. It is the responsibility of railroad personnel to take the appropriate action whenever it is discovered that a rail in track contains a defect. This cannot be done if the employee is not familiar with the requirements. If this action is not taken, it is a definite violation of the Federal Track Safety Standards."

● **Thanks for the "cooperation."** In view of the revelations by English, the question might be raised whether he had tongue in cheek when, in closing his address, he thanked the roadmasters for their "cooperation during the past year." Without this cooperation, he added, "the first year under the Federal Track Safety Standards would have presented many more problems for both of us." If the same degree of "cooperation" is extended by the railroads in the second year, it may be a crucial one for the FRA Track Safety Standards.

For their part, what do railroad track men have to say? If experience at the Roadmasters' meeting can be considered a clue the answer is: Nothing. In accordance with customary practice, the subject of the track standards was thrown open for discussion following presentation of the committee report and again when English had finished his remarks. In each case—and contrary to customary experience at these meetings—total silence prevailed. Before they speak, can it be that track supervisory officers are waiting for a cue from railroad managements? ■

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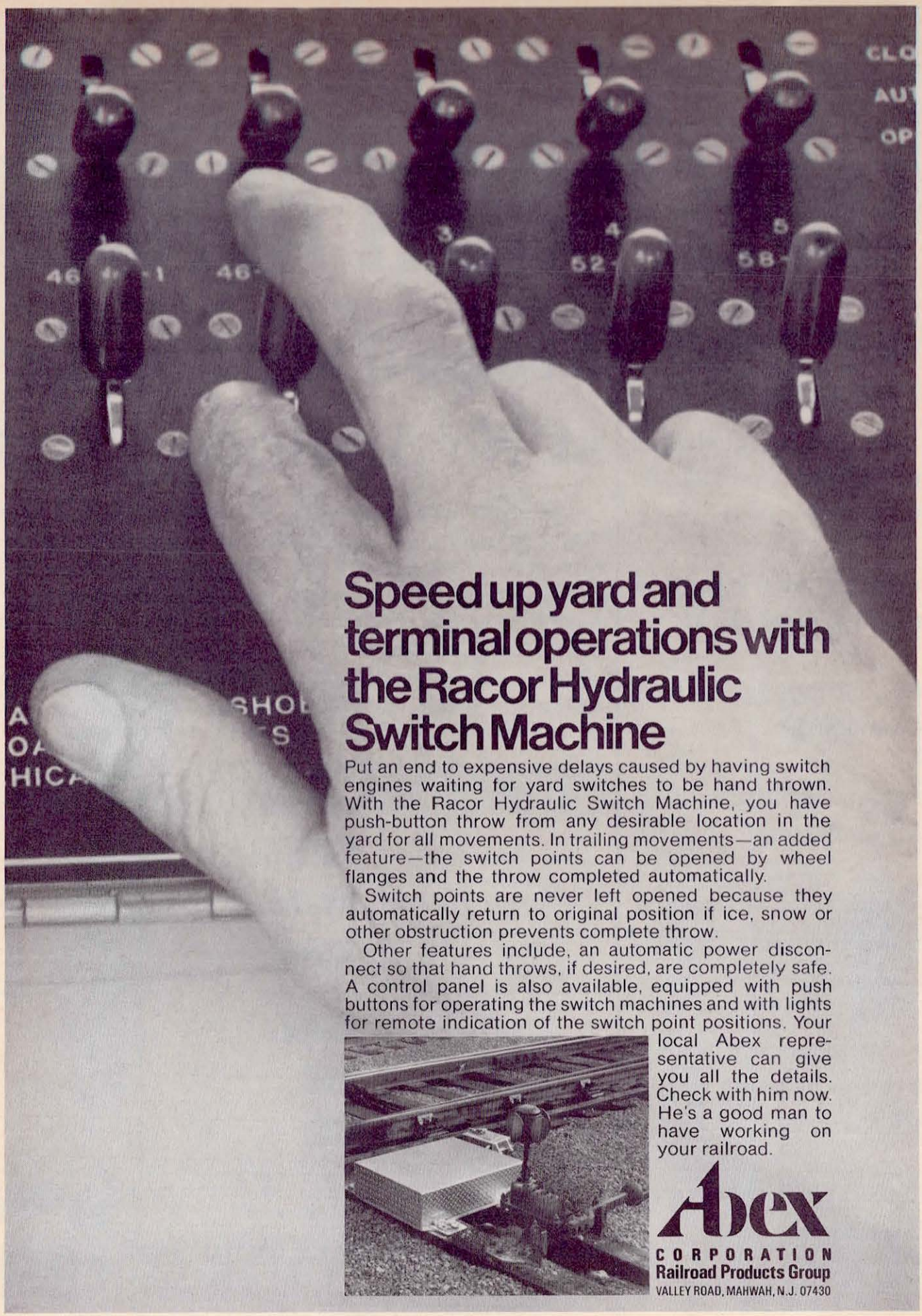

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Track standards: A question of compliance

Come Oct. 16, time will have run out for the railroads to bring their tracks into compliance with the FRA Track Safety Standards. That date is set in the standards as the deadline for bringing the tracks into compliance with those provisions covering track geometry (gauge, alignment, surface and runoff for curve elevation) and crossties. The deadline for all other provisions of the standards was Oct. 16, 1972.

Have these requirements been met by the railroads? Have their tracks, in fact, been brought up to the standards as required by law?

Perhaps the best way to approach these questions is to consider some of the factors influencing the answers. Having their track standards dictated by the government is an entirely new experience for the railroads, and understandably there may be some uncertainty—not to say confusion—regarding the urgency of achieving a state of compliance by a specified date. Also, the railroads are certain to encounter practical difficulties in making their tracks conform to the standards and in keeping them in that condition at all times. Some roads simply don't have the resources needed to perform the indicated work. On others there may be a reluctance to commit the necessary funds.

Because of these and other factors, any attempt to present an over-all picture of railroad compliance with the FRA standards must be done with broad strokes of the brush. Information making it possible to present such a picture was made available at the annual convention in Chicago last month of the Roadmasters Association. It came out in the form of two program features, one a committee report on "The First Year of Experience Under FRA Regulations," and the other an address on "The FRA Track Inspector—The First Year," by E.R. English, regional engineer of FRA at Chicago.

● **Reluctant track men.** Based on these presentations, several deductions can be made. One is that only partial compliance could be reported by the committee (partly because its report had to be compiled far in advance of the Oct. 16 deadline). Another is that track men, as brought out in the report, are reluctant to comment on the subject. Also, it is apparent that the railroads as a whole had been marking time pending modifications of the standards.

From the comments by FRA's English, obvious deductions are that many railroads are not inspecting their tracks as required by the standards, that the results of the inspections are not always being properly reported, and that deviations from the standards are not being reported in all cases, nor is remedial action being taken.

An important factor underlying enforcement and application of the FRA standards is that FRA must depend almost entirely on track inspections by railroad inspectors and written reports of these inspections for its knowledge of track conditions. Thus, the main function of FRA inspectors is to monitor the railroad inspections, although actual inspections on a spot or local scale may be made if they are considered necessary.

In compiling material for its report, the Roadmasters' committee endeavored to determine the progress being made in complying with the standards. The report, which was presented by the committee chairman, H.E. Richardson, engineer, maintenance-of-way of Seaboard Coast Line, noted that over 60% of replies to a questionnaire "indicated that schedules had been made to bring the track into complete compliance." However, only a few of the answers indicated that completion dates of the "schedules" had been set or that the work would be completed within a year.

● **Difficulty of compliance.** Although the remarks made by English were couched in polite and conciliatory terms, the thrust of his comments was that many railroads are falling far short of complying with at least some aspects of the FRA standards.

English called the attention of the roadmasters to the fact that the "person assigned to make the inspection of yard tracks and sidings is your responsibility and could be any one of a number of people as long as they are qualified." For those who are having problems in establishing a format for such inspections, English had a suggestion: "The railroad track inspector could list each track individually or make a statement that tracks 1 through 20 in Yard X were inspected on a particular day—or, even a straight-line diagram using a color code is sufficient to show that the track was inspected." He added: "The important thing is that the inspection must be made."

In fact, any method of reporting inspections that is acceptable to the railroad "would be accepted by the FRA," said English, "as long as it shows that the tracks are inspected at the required frequency, that defects are shown and that proper action is taken."

● **No report—no inspection?** Specific areas in which the railroads are failing to comply with the standards were mentioned, and turnout and track-crossing inspection is one of these. The standards require, he said, that these types of trackage be walked monthly and that the results must be shown on a written track inspection report. But, the Federal inspectors are finding that in many cases this is not being done, according to English. He added: "We must assume

FRA's E.R. English says:

"We must assume that, if there is no written report of switch and track crossing inspections, these inspections are not being made."

"Federal inspectors have found on some properties inspections are not being made on a regular basis. Weeks, even months, may pass between main track inspections."

"On some of these on-the-ground inspections, we have discovered many serious conditions are not being reported, nor repaired."

"Further investigation shows that many railroad track inspectors are not aware of the requirements of the track standards. Some of these people have never seen a copy of these standards."

"One very disturbing fact uncovered by our inspectors is that many railroad employees connected with the rail inspection programs are unfamiliar with the requirements of the Federal standards."

Are track men awaiting word from management?

that if there is no written report of switch and track-crossing inspections, these inspections are not being made."

A suggestion was made for indicating that switches and railroad crossings have been inspected. It is sufficient to satisfy the requirements, said English, if a notation is made on the bottom of the daily track inspection report saying that all turnouts and crossing diamonds between Mile Post 1 and Mile Post 2 were walked on a particular day, "as long as it is at the required frequency, that defects are shown, and the proper action is taken."

● **Case of the "lost" ten miles.** Federal inspectors are also finding while checking inspection reports that sections of main tracks are not being inspected at all, according to English. In some cases this seems to result from a lack of communication. He cited an example that was brought to the attention of a division engineer when an FRA inspector, while checking inspection records, found a 10-mile section of a main track that had not been inspected for a period of three months. This occurred when two railroad track inspectors misunderstood instructions as to what were the limits of their respective territories. During the three-month period, one inspector inspected track up to Mile Post 230; the other, coming from the opposite direction, stopped at Mile Post 240, thus leaving 10 miles of uninspected track.

● **No regular inspections.** Such incidents are not the only shortcoming in railroad inspection practices, according to English. "In other cases it seems to be a lack of formal inspection procedures," he said. "Federal inspectors have found on some properties that inspections are not being made on a regular basis. Weeks, even months, may pass between maintrack inspections."

The reporting of defects found when making track inspections was another area discussed by English. The standards require, he noted, that "any and all deviations from the standards be shown on the inspection report."

How these defects are reported, he said, is an area that has come under close observation. "The defects should be specific; details should be given. I know what is going through your mind: To comply with what I have said, the inspector would be required to do a lot more paperwork. Nothing could be further from the truth—and to prove my point, let me give you several actual examples of defects reported by some of your own inspectors. I quote: 'The crossing diamond at Tower X is very, very bad, and getting worse.' Wouldn't it have been much better to say: 'The crossing diamond at Tower C is three inches low," English suggested.

"Another example, and I quote: 'A very bad low spot at Mile Post Y.' Again it would be much better to say: 'Mile Post Y, a joint three inches low.'

"Using specifics rather than adjectives gives both you and the FRA a better indication of actual field conditions."

● **Reporting remedial action.** Although the standards require that the corrective action taken be shown on the inspection report, "our inspectors are finding that in many cases this requirement is not being met," said English. "On numerous reports reviewed, no remedial action is being noted at all. Even if the railroad track inspector makes the repairs himself, the defects should be shown and it should be noted that the repairs have been made."

What must be done

"The notation 'told the roadmaster' is not sufficient for the remedial-action requirement of the Federal Track Safety Standards. The railroad inspector, when finding a deviation from the Federal standards, must either repair it himself, have it repaired by others before the next train operates over that section, slow-order the track so that the condition falls within the requirements for that class of track, or, last but not least, remove the track from service."

● **Those suspicious of non-defects.** A situation that attracts the attention of the FRA, according to English, is the finding on some railroads that "no defects are being reported day after day, week after week. Defects do occur—even on the many thousands of miles of well-maintained track we have in this country. The locations where we find this condition existing are excellent places for the FRA track inspector to make an on-the-ground inspection. I might mention that even at locations where inspection procedures and written records are good, periodic field inspections are being made.

"These on-the-ground inspections may only be a spot check involving a mile or two of mainline, a walk through an interlocker, or a spot check of several yard tracks. This inspection will be expanded to cover longer distances if it is revealed that many unrepaired defects exist, or that defects are noted that are not on the written inspection report. On some of these on-the-ground inspections, we have discovered many serious conditions are not being reported, nor repaired."

● **Uninformed track inspectors.** Another surprising finding revealed by English is that "many railroad track inspectors are not aware of the requirements of the track standards." Also, he said, "some of these people have never seen a copy of these standards. Others have not had their responsibilities explained to them."

Apparently, at least some of these shortcomings apply to the reporting of rail defects. Reports of such defects, according to English, must show the location and nature of any rail defect found through internal inspection, and the remedial action taken. But, the FRA's inspectors have found that many of these rail inspection reports do not indicate the size of the defect. "This makes it impossible," said English, "for not only the Federal inspector, but also railroad personnel, to know what remedial action is required under the standards.

"Notations indicating when the defective rail was removed from track is an area that at times is overlooked by some of the railroads. This, along with the slow-order information, is an important requirement in complying with the standards. One very disturbing fact uncovered by our inspectors is that many railroad employees connected with the rail-inspection programs are unfamiliar with the requirements of the Federal standards. It is the responsibility of railroad personnel to take the appropriate action whenever it is discovered that a rail in track contains a defect. This cannot be done if the employee is not familiar with the requirements. If this action is not taken, it is a definite violation of the Federal Track Safety Standards."

● **Thanks for the "cooperation."** In view of the revelations by English, the question might be raised whether he had tongue in cheek when, in closing his address, he thanked the roadmasters for their "cooperation during the past year." Without this cooperation, he added, "the first year under the Federal Track Safety Standards would have presented many more problems for both of us." If the same degree of "cooperation" is extended by the railroads in the second year, it may be a crucial one for the FRA Track Safety Standards.

For their part, what do railroad track men have to say? If experience at the Roadmasters' meeting can be considered a clue the answer is: Nothing. In accordance with customary practice, the subject of the track standards was thrown open for discussion following presentation of the committee report and again when English had finished his remarks. In each case—and contrary to customary experience at these meetings—total silence prevailed. Before they speak, can it be that track supervisory officers are waiting for a cue from railroad managements? ■

LETTERS

Piggyback users

Chicago, Illinois

To the Editor:

The comments resulting from your survey of piggyback users (RA, Aug. 27, p. 34) were quite interesting. Our experience very closely parallels that of Walter Weart, even as to the time frame, except that we are not into rate negotiations to the extent he is.

In common with other commentators, claim problems are inhibiting further growth of piggyback in our shipping picture. The rail carriers for the most part seem to adopt an attitude of completely washing their hands of any responsibility for claims arising from piggyback shipment. Our claim ratio with motor carrier shipments and paradoxically with box car shipments is very good but this has not been the case with TOFC. We are experimenting with revised loading methods and with carrier origin and destination ramp inspection to try to counteract the damage problem. Obviously, with today's high cost of labor and dunnage material, if substantially more dunnage is required to ensure damage-free movement of piggyback traffic, its economic advantage over motor carrier service is soon negated.

In short, we agree, piggyback has come a long way baby, but it still has quite a ways to go.

Dwight E. Long
Manager of Transportation
Velsicol Chemical Corporation

Armoured trains

Menlo Park, Calif.

To the Editor:

I am doing research into the history of armoured trains in warfare. My book will trace the development of these weapons from the mid-19th century up to and including World War II. Since very little work has been done on this subject by other military historians, there are few sources available.

I am seeking memoirs, notes or reminiscences of individuals who may have had personal experiences with armoured trains or who may have access to photographs, drawings or other data relating to such trains.

I hope to locate and correspond with people who took part in operations with or against armoured rail trains or armoured rail trollies. I would especially like to find persons who may have assisted in the design or manufacture of such trains.

I am interested in *all* armoured train operations, but especially those in:

1. The Russian Civil War and "Allied" Intervention;
2. The Chinese Civil War and the conflict with Japan;
3. World Wars I and II.

James Hall
P.O. Box 936
Menlo Park, Calif. 94025

John Barriger's record

New York, N.Y.

To the Editor:

I cannot match John Barriger's record as a reader and subscriber of Railway Age (RA, Aug. 27, p. 44). Oddly, however, I also began to read it at about age 13 and had my first subscription two months after my 15th birthday. That makes me a 42-year subscriber and, should I be vouchsafed as many productive years as John, one day I shall join your 60-year club.

Ernest W. Williams
Professor of Transportation
Columbia University in the City of N.Y.

New York

To the Editor:

As a non-railroader, I have been a subscriber to Railway Age for 46 years. How many other non-railroaders do you have with that span of years?

Joseph T. Small
Retired security analyst

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The more you learn about rapid-transit battery systems the more you'll think of Exide.®

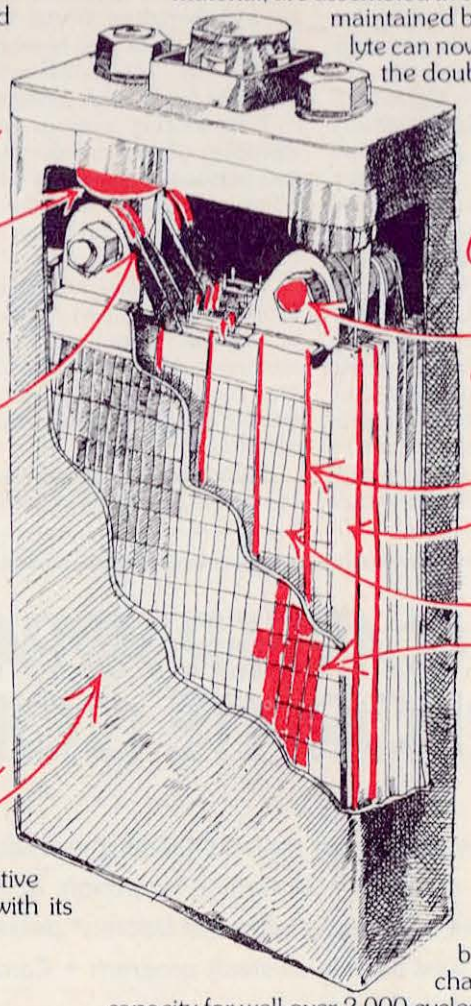
1. The positive advantages of pocket plates in nickel-cadmium batteries.

It's difficult to imagine how a rapid-transit system could operate without batteries. They provide the trains with current needed at intermittent periods. They make it possible for relays to control vital switchgear and signal lights. And they stand ready to supply life-saving current in emergency situations.

Modern rapid-transit systems are placing a wider variety of loads on their batteries than ever before. And they need a battery that can effectively handle these loads as well as stand up to all kinds of environmental conditions.

The rugged design of a nickel-cadmium battery.

Just a look at the nickel-cadmium alkaline battery tells you it's made to last. A durable container of steel or poly-vinyl chloride. Perforated, steel pocket positive and negative plates with rugged steel U-frames to prevent loss of active material. Solid plastic separators to maintain plate spacing and stop cell shorts. Steel washers on steel conductor rods to keep the plates firmly in place. All tightly locked together to massive cylindrical posts. Once assembled, the nickel-cadmium battery is rugged enough to keep operating under any conceivable rapid-transit situation. There are two positive plate designs you can choose for this battery, each with its own distinct advantages.



Single-pocket positive plates provide light-to-medium discharges.

In a nickel-cadmium battery, a negative plate has a greater discharge capacity than a positive plate with the same amount of surface area. This difference can be overcome by having more positive than negative plates and by increasing the surface area of each positive plate. All Exide/Alcad pocket plate nickel-cadmium batteries use more positive than negative plates. But the single-pocket positive plate is not constructed to increase its surface area relative to the negative plate. The active material is simply locked inside single pockets of finely perforated steel. Since this surface area is no larger than the negative plate, a balance is established between the two that makes the single pocket approach correct for rapid-transit applications where medium discharge rates and light-to-moderate duty are involved.

Double-pocket positive plates ideal for deep discharges.

To match the discharge capacity of the negative plate, the Exide/Alcad double-pocket approach actually doubles the surface area of the positive plate. Two sheets of single-pocket plates, each containing their active material, are assembled in a single frame with a space maintained between them. The electrolyte can now circulate on either side of the double-pocket plate, as well as between the two sheets of pockets. This tremendous increase in square inches of surface area allows the double-pocket positive to match its discharge capacity to the negative plate. Because of this, the battery can handle deep discharges up to 80% of its rated capacity for well over 2,000 cycles. These features make the double-pocket battery a perfect choice for all heavy-duty rapid-transit applications.

Exide pocket plate batteries and modern rapid-transit systems.

Today's growing rapid-transit systems need a battery that can stand up to the punishing demands of high-speed rail transportation. At the same time, a battery must offer a wide choice of discharge capacities to cover all the varied rapid-transit applications.

Exide nickel-cadmium pocket plate batteries are built to take the punishment. And single or double-pocket plates make it possible to ideally match the discharge capacities needed to operate the most reliable and economic kind of modern rapid-transit system.

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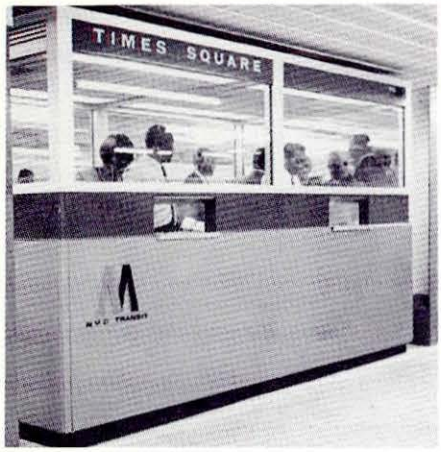
New Products Report



NYCTA is installing 600 bullet-proof token booths

Bullet-proof token booths capable of providing token sellers with security and comfort while efficiently serving the public are being installed by the New York City Transit Authority. NYCTA authorized the design of the booths and two NYCTA design architects and a consulting architect worked on the project. More than 100 of the new booths have been installed and plans call for a total of 600 throughout the system. The booths are of two types: one bay for one token seller, and two-bay booths accommodating two sellers.

Each booth is a totally enclosed unit. All are equipped with Rotron Caravel fans, as well as air conditioners, heaters and air filters. (Two-bay booths have two fans; one-bay booths have one fan.) The roofs are made with enamel baked aluminum; the booth frames and panels are 3/16-in. steel plate. Floors are of tile-inlaid cement and the bullet-proof glass windows are 1 13/16 in. thick. Single booths are 6 ft wide, 6 ft long and 7 ft 3 in. high. Double booths are identical in width and height but are 12 ft. long.

Circle 60 on reader service card.

Transit communications system serves a variety of purposes

A comprehensive rapid transit communications package is being offered by Ripper Robots Ltd. of the United Kingdom. The train talk equipment provides a conductor-to-engineman telephone link which, with the flick of a switch, enables either person to make announcements to passengers. For pre-recorded announcements to passengers, the train talk system can be hooked up to a tape reader known as Audio Navigator Mark 5. This permits pre-recorded journey information to be presented automatically to passengers at pre-selected points along the route. The procedure is independent of train speed; even if the train is delayed en route the synchronization of messages is unaffected, because the system works on distance traveled, not time elapsed. A music facility is available as an optional extra.

The system has two side applications—engineman training and security. Trainees can receive pre-recorded instructions as they proceed along the track. This means that an instructor can make an original recording ensuring that all trainees receive the same instructions. An alarm system can be readily built into the system, because the audio navigator measures the distance covered. If the train stops for more than a certain period, or where it should not stop at all, an alarm can be sounded.

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New asphalt and grease removal concept for transport industry

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SUPPLY TRADE

Michael J. Dennehy, Jr., has been elected president, chief executive officer and a director of **Intermodal Transportation Systems, Inc.,** and its wholly owned subsidiaries, ATC Leasing Corp. and Continental Leasing Corp., Hoboken, N.J. Mr. Dennehy was formerly vice president, Northern Territory, Acme Fast Freight and at one time was assistant vice president traffic, Piggyback Division, New York Central Transport Co.

Lawrence R. Dwyer has been appointed vice president of marketing and sales of Intermodal and subsidiaries. Mr. Dwyer will also continue as vice president and general manager of ATC Leasing Corp.

Donald F. Kittredge has been named vice president and general manager, **Davanac Industries, Ltd.,** Montreal. He was formerly vice president and general manager, **Litewate Transport Equipment Division** of **Stanray Corp.,** Milwaukee, Wis.

J.A. Aitken, chief engineer, **National Steel Car Corp. Ltd.,** Hamilton, Ont., has been appointed vice president-engineering. **R.W. Cooke,** secretary, treasurer and comptroller, appointed vice president-finance. **L.G. Dornan,** general purchasing agent, appointed vice president-purchases. **H.S. Ashby,** sales manager, Montreal, appointed vice president-sales. **J.N. Baird** will continue as sales executive following his retirement as vice president-sales.

Joseph A. Ballarino has been named to the newly created position of manager, lease systems and planning, **Pullman Transport Leasing Co.,** Chicago. He was formerly systems analyst, **Pullman Incorporated.**

Franz Wagner has been appointed manager, product design and engineering, **C&D Batteries,** an ELTRA Company, at Plymouth Meeting, Pa. **E. Lewis Warren** has been named senior project engineer.

B.J. Malloy has been appointed account manager, **Union Switch & Signal Division, WABCO,** at New York.

Calendar

The 66th annual meeting of the **National Industrial Traffic League** will be held in the Palmer House, Chicago, Nov. 14-16.

The **National Machine Tool Builders' Association** announced recently the theme for its biennial 1974 International Machine Tool Show: A World of Production Ideas. The show will be held Sept. 4-13, 1974, in Chicago's International Amphitheatre and McCormick Place.

An international transport exhibition, **Trans 74,** and a conference on transport problems will be held May 21-26, 1974, at Bella Centret, Copenhagen, Denmark. The exhibition is being arranged by the Association of Transport Material and the Danish Society of Transport Economy in cooperation with Bella Centret.

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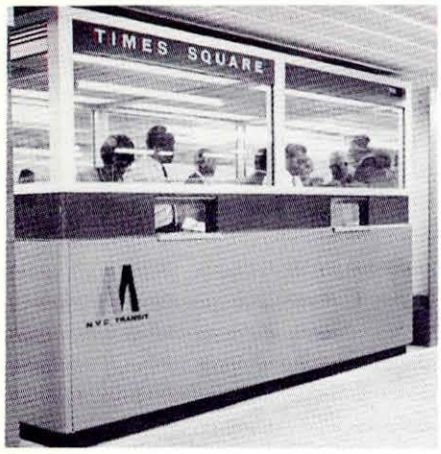

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a three-position heavy duty switch and a shockproof leather handle. An adjustable stand clamps firmly to the light and permits it to rotate 170 deg. in a vertical plane.

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Durasheath power cable, designated as extra flame retardant, is available in sizes 12 AWG through 1000 MCM. This 600-volt product, developed by Anaconda Wire & Cable, offers excellent flexibility and resistance to heat, moisture and chemicals. The copper conductor has ethylene propylene insulation and a chlorosulfonated polyethylene jacket.

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A new battery-powered central power system for critical alternating current loads is available from Exide Lightguard Division of ESB Inc. The system is an uninterruptible power supply designed to automatically feed no-break ac power to selected critical ac loads as well as to emergency fluorescent lighting systems. A single bookcase-sized cabinet houses the entire system, including the 12-cell lead-acid battery, the new "charge-regime," various controls and the electronic static inverter that changes direct current to alternating current. The single-phase inverter changes the battery's dc power to either 120 volts ac or 277 volts ac, depending on the model of console. Four capacity ratings are available for use with either the 120-vac or 277-vac console systems: 350, 750, 1,050 and 1,350 watts.

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Digital multimeter has high precision

A new Fluke digital multimeter offers 5 ½ digits with autoranging, autopolarity and a measurement accuracy up to 0.005%. DC volt range is from 1 microvolt to 1100 volts in five ranges, ac volts from 10 microvolts to 1100 volts rms in 5 ranges and resistance from 10 milliohms to 12 megohms in 5 ranges.

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Multiplex expands to three supergroups

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Circle 67 on reader service card

NEW LITERATURE

MASS TRANSIT. An updated list of research and technical studies dealing with a wide range of transit-related subjects—including the social, political, economic and engineering aspects of urban transportation—has been released by the Urban Mass Transportation Administration. UMTA also has published a study report entitled "The Handicapped and Elderly Market for Urban Mass Transit—Executive Summary." The latter is intended to serve as a basis for policy decisions about programs to respond to the special needs of the elderly and handicapped.

Circle 70 on reader service card

FREIGHT LOADING. Two new publications have been issued by the Freight Loading and Container Section of the AAR's Operations and Maintenance Department: "Procedures for Handling, Stowing and Bracing Mixed Merchandise of Consolidator and Forwarder Freight in Closed Cars, Trailers and Containers" and "Recommended Methods for Loading of Products in Cans and Glass in Closed Cars." Each publication is 5 in. by 7 ½ in. and costs 25 cents.

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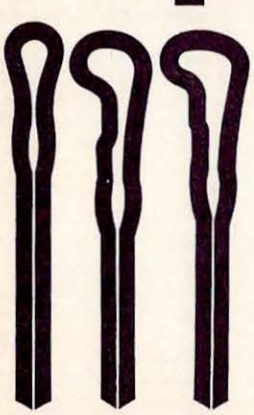

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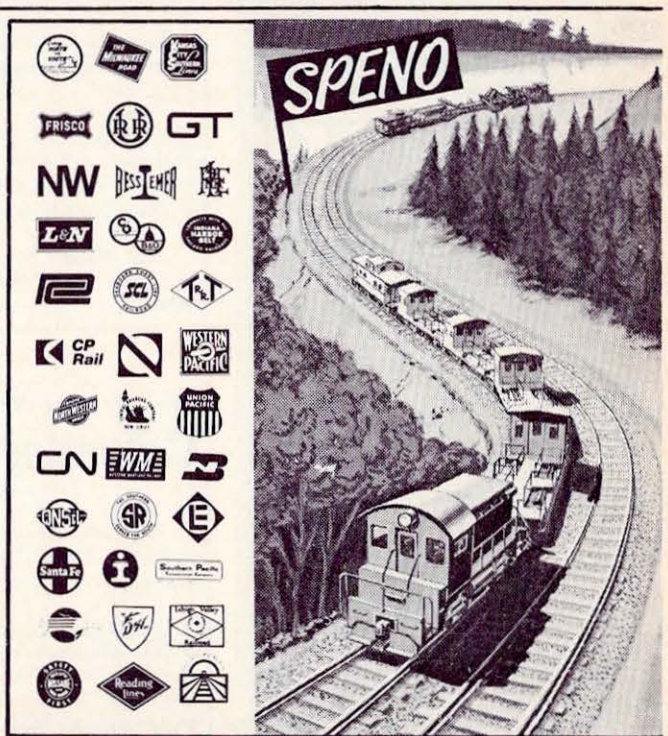

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SUPPLY TRADE

Michael J. Dennehy, Jr., has been elected president, chief executive officer and a director of **Intermodal Transportation Systems, Inc.,** and its wholly owned subsidiaries, ATC Leasing Corp. and Continental Leasing Corp., Hoboken, N.J. Mr. Dennehy was formerly vice president, Northern Territory, Acme Fast Freight and at one time was assistant vice president traffic, Piggyback Division, New York Central Transport Co.

Lawrence R. Dwyer has been appointed vice president of marketing and sales of Intermodal and subsidiaries. Mr. Dwyer will also continue as vice president and general manager of ATC Leasing Corp.

Donald F. Kittredge has been named vice president and general manager, **Davanac Industries, Ltd.,** Montreal. He was formerly vice president and general manager, **Litewate Transport Equipment Division** of **Stanray Corp.,** Milwaukee, Wis.

J.A. Aitken, chief engineer, **National Steel Car Corp. Ltd.,** Hamilton, Ont., has been appointed vice president-engineering. **R.W. Cooke,** secretary, treasurer and comptroller, appointed vice president-finance. **L.G. Dornan,** general purchasing agent, appointed vice president-purchases. **H.S. Ashby,** sales manager, Montreal, appointed vice president-sales. **J.N. Baird** will continue as sales executive following his retirement as vice president-sales.

Joseph A. Ballarino has been named to the newly created position of manager, lease systems and planning, **Pullman Transport Leasing Co.,** Chicago. He was formerly systems analyst, **Pullman Incorporated.**

Franz Wagner has been appointed manager, product design and engineering, **C&D Batteries,** an ELTRA Company, at Plymouth Meeting, Pa. **E. Lewis Warren** has been named senior project engineer.

B.J. Malloy has been appointed account manager, **Union Switch & Signal Division, WABCO,** at New York.

Calendar

The 66th annual meeting of the **National Industrial Traffic League** will be held in the Palmer House, Chicago, Nov. 14-16.

The **National Machine Tool Builders' Association** announced recently the theme for its biennial 1974 International Machine Tool Show: A World of Production Ideas. The show will be held Sept. 4-13, 1974, in Chicago's International Amphitheatre and McCormick Place.

An international transport exhibition, **Trans 74,** and a conference on transport problems will be held May 21-26, 1974, at Bella Centret, Copenhagen, Denmark. The exhibition is being arranged by the Association of Transport Material and the Danish Society of Transport Economy in cooperation with Bella Centret.

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Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended Sept. 15 totaled 564,387 cars, according to the Association of American Railroads. This was an increase of 90,407 cars, or 19.1%, compared with the previous week, and an increase of 14,798 cars, or 2.7%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Sept. 15 are estimated at 17.2 billion, an increase of 8.7% above the corresponding week of 1972. The Sept. 15 ton-mile figure equals the all-time high established May 26.

REVENUE FREIGHT CARLOADINGS

Commodity	Sept. 15 week	Sept. 8 week
Grain	32,971	29,648
Farm products	9,162	7,164
Metallic ores	51,203	43,129
Coal	95,334	78,501
Crushed stone, gravel & sand	32,579	27,911
Nonmetallic minerals	16,184	15,820
Grain mill products	20,949	17,397
Food and kindred products	24,549	20,621
Primary forest products	24,061	20,915
Lumber & wood products (except furniture)	17,438	14,691
Pulp, paper & allied products	22,836	18,654
Chemicals & allied products	27,614	24,021
Petroleum products	9,371	8,271
Stone, clay & glass products	22,703	19,793
Coke	8,934	8,388
Metals & products	26,835	23,401
Motor vehicles & equipment	26,912	20,673
Waste & scrap materials	16,779	13,080
Forwarder & shipper assn. traffic	10,816	8,698
All other carloads	66,571	53,314
LCL traffic	586	362
Total cars loaded	**564,387**	**474,452**
Cumulative total, 37 weeks	1973	1972
	19,278,836	18,282,731
Estimated revenue ton-miles (billions) 37 weeks	595.0	544.6

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Sept. 8 totaled 26,601 cars (16.0% above the corresponding week last year) and 45,597 trailers or containers (up 18.8% from 1972). Cumulative volume for the first 36 weeks of 1973 is 1,043,376 cars (up 17.2% from last year) and 1,804,347 trailers or containers (up 20.8% from 1972).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
Sept. 7, 1973	3,998,058	156,935,010
Sept. 7, 1972	3,392,498	137,226,675

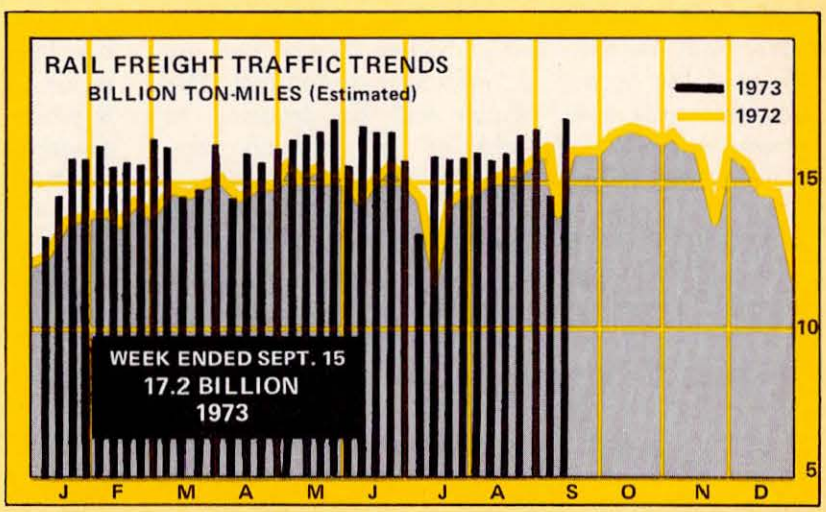
● *Missouri Pacific.*—Ordered 2,512 new freight cars and 60 cabooses: 1,150 box cars equipped with cushioning devices and 200 100-ton covered hopper cars from ACF; 250 box cars equipped with cushioning devices and load dividers from Berwick Forge & Fabricating; 500 100-ton gondolas and 100 100-ton flat cars from Thrall Car; 300 100-ton open-top hopper cars from Bethlehem Steel; 12 high-cube box cars from Greenville Steel Car; and 60 cabooses from International Car (RA, Sept. 24, p. 13).

Also MoPac ordered 49 3,000-hp diesel-electric units and five 1,500-hp units from EMD; and six 3,000-hp units from GE.

● *Norfolk Southern.*—Leased 150 100-ton, 4,750-cubic-foot-capacity covered hopper cars from United States Railway Equipment Co.

● *Santa Fe.*—Will acquire 1,838 new freight cars and schedule 73 cars for conversion/modernization. The new-car orders: 500 52½-ft, 70-ton insulated box cars and 35 60-ft, 100-ton insulated box cars from Pacific Car & Foundry; 100 50-ft, 7-in., 100-ton high-cube box cars and seven StacPac flat cars from Pullman-Standard, with 28 StacPac containers from Whitehead & Kales; 200 50½-ft, 100-ton plain box cars from ACF Industries; 125 20,000-gallon tank cars from Marathon Tank Car; 100 60-ft, 9-in., 100-ton gondolas from Greenville Steel Car; five 60-ft, 225-ton FM flat cars from Maxon Corp.; 300 52½-ft, 70-ton insulated box cars and 300 61-ft, 100-ton insulated box cars from company shops at Topeka. Santa Fe will also acquire five cabooses from International Car, and 161 cars from builders as-yet undetermined: 122 60-ft, 100-ton high-cube box cars, 35 SnapPac cars and four 69-ft cradle-equipped flat cars.

Also, Santa Fe will acquire 54 new diesel-electric units and rebuild 110 units. New orders are for 27 3,600-hp units from GE and 17 2,300-hp and 10 3,600-hp units from EMD. Company shops at Cleburne, Tex., will rebuild 52 old road units and convert them into 1,500-hp road-switcher units; company shops at other points will rebuild 25 2,400-hp units, 26 1,500-hp units and seven 1,200-hp units.



Source: Association of American Railroads

Moving People

VOTERS OK DENVER TRANSIT FINANCING

Voters in the six-county Denver (Colo.) metropolitan region have approved a financing method for a $1.56-billion regional transportation system (RA, April 9, p. 52). The approved measure gives the Regional Transportation District authority to issue up to $425 million in bonds, backed by a half-cent sales tax, to raise the local share of the capital cost of a combined bus/rapid transit system. Initial steps are being taken in a three-year development project which will select and refine a personal rapid transit (PRT) system which could be used as the rapid transit portion of the RTD program. The project will be entirely funded by the Urban Mass Transportation Administration. RTD proposes to construct nearly 100 miles of PRT guideway in the most heavily traveled parts of the Denver metropolitan area. It is the first major metropolitan area in the U.S. to propose using PRT on such a vast scale. Construction is scheduled to begin in 1977 and be completed by 1983.

GERMAN BRAKES AVAILABLE IN U.S.

Knorr Bremse, German braking systems manufacturer, has formed a U.S. subsidiary, Knorr Brake Corp., which will sell passenger and rapid-transit car brakes. Already KB brakes are in service on high-speed U.S. trains and have been specified for new rapid-transit cars. The Hackensack, N.J., firm handles applications of KB components from air compressors through pneumatic and hydraulic controls to disc brakes and magnetic track brakes.

SWEDISH TRAIN TO FEATURE AUTOMATIC TILTING

By 1975 the Swedish State Railways will be operating an experimental high-speed electric multiple-unit train featuring a new ASEA electrical system and automatic "tilting" of carbodies so that curves may be traversed at higher speeds than are now possible because of passenger discomfort. The three-car test train, which will be designed to provide a comfortable ride at 135 mph on large-radius curves, is to operate routinely at 125 mph.

DMJM/KAISER WIN BALTIMORE CONTRACT

Daniel, Mann, Johnson and Mendenhall and Kaiser Engineers have been awarded a joint-venture contract worth $21 million for engineering work on the first phase of Baltimore's rapid transit system, an 8.6-mile line that is to run from the Inner Harbor to the northwest corner of the city. Project director will be David Hammond, formerly chief engineer and assistant general manager of the Bay Area Rapid Transit District, Oakland, Calif.

MIDWEST TURBO RUNS GET STARTED

Amtrak's Midwest turbo service got under way Oct. 1, though not quite as it had been originally planned. Initial schedules call for two roundtrip runs daily (except weekends) between Chicago and St. Louis, with two French-built trains handling the service. Amtrak had planned to put a four-train fleet into service, St. Louis/Chicago/Milwaukee, but after a Midwest-destined United Aircraft turbo was involved in a collision in Canada, Amtrak decided to go with just the two French trains—and add the Chicago/Milwaukee link, hopefully, later this year.

UMTA MAKES A SERIES OF GRANTS

The Urban Mass Transportation Adminstration has announced the following grants: to the New York City Transit Authority—$62,733,33 to assist in construction of a new Manhattan-Queens subway line and $12,144,609 for continuing work on the Second Avenue subway; to the Delaware River Port Authority—$23,269,400 to assist in purchase of 45 new rapid transit cars and additional facilities on the Lindenwold-Philadelphia line, and improvements to Philadelphia's Locust Street subway; to San Francisco's Bay Area Rapid Transit District—$21,681,333 to help purchase and install safety, reliability and operating improvements, including a 2 ½-mile test track to test transit cars after repair or modification; to New York City's Metropolitan Transportation Authority—$10.5 million to assist in continuing rehabilitation and extension of the Long Island Rail Road electrification system. Also, a $134,592 contract for design and construction of two track geometry measuring systems has been awarded to MB Associates, San Ramon, Calif.

NIAGARA FRONTIER METRO PLAN MOVES AHEAD

The Niagara Frontier Transportation Authority's contract with Bechtel Associates Professional Corp. has been approved by the Urban Mass Transportation Administration. "This means," says William E. Miller, NFTA chairman, "that Bechtel Associates, general consultant to NFTA, will begin work immediately on the preliminary design activity associated with the Buffalo-Amherst rail rapid transit line." Kenneth G. Knight, NFTA's general manager for Metro construction, said Bechtel Associates' first task will be to develop contracts with other members of the consulting team. "It is the NFTA's declared intention," Knight added, "to conduct an 'open study' with an "open mind.' The goal of the preliminary design activity is to develop a Metro system plan which will be economically feasible, environmentally sound, and a benefit to the community."

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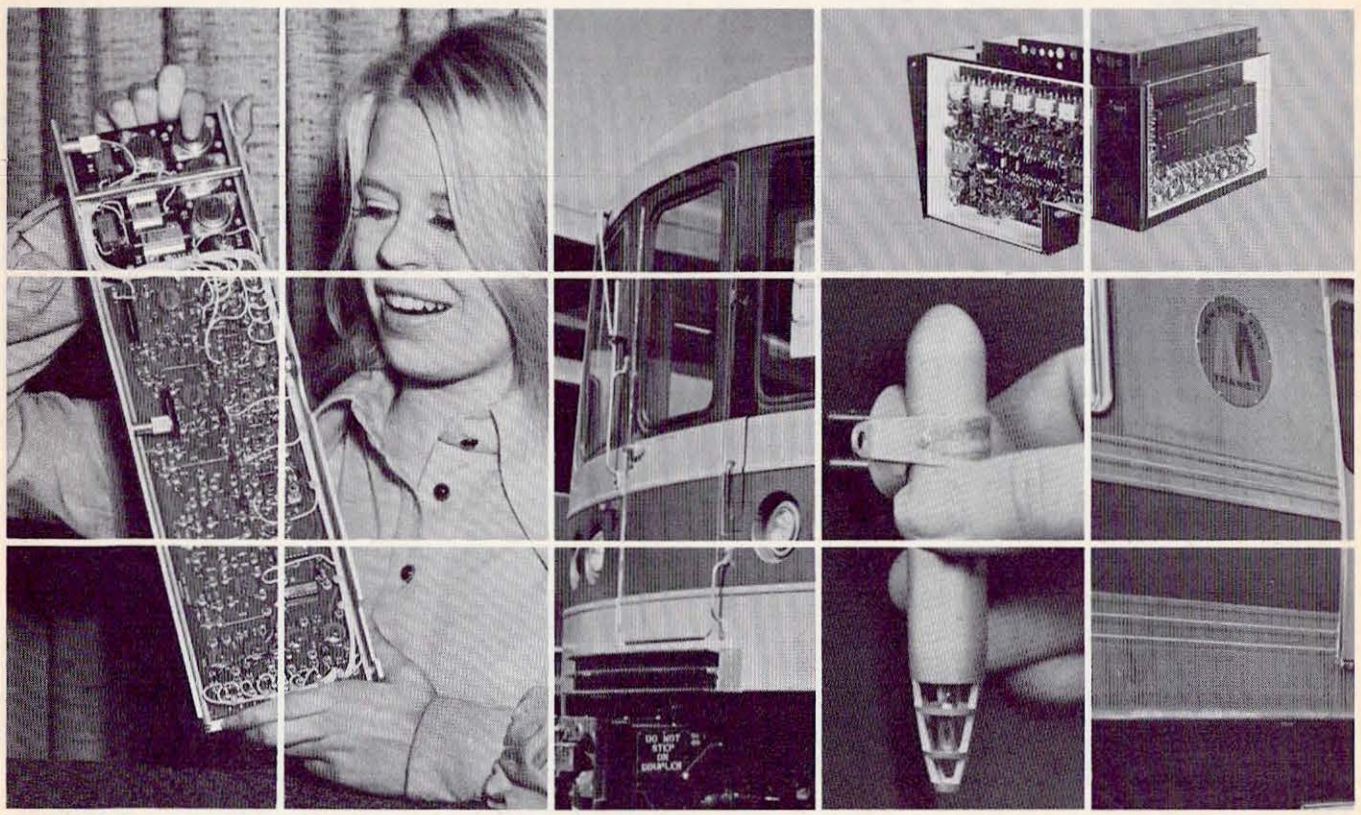

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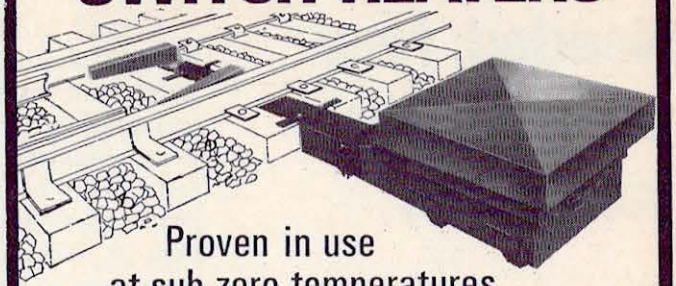

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Viewpoint

Needed: New productivity yardsticks

It used to be that productivity-measurement was something to be thought about at contract time and, for the most part, contract time only. That's not true now (if, in fact, it ever should have been). Wage and price controls have brought a direct relationship between productivity-measurement and rates as well as wages. Productivity-measurement can't be ignored in budgeting, for capital or operating purposes. Productivity-measurement shouldn't be ignored in any ICC efforts—such as the one now under way—to figure a way for transportation companies to gain rate increases as offsets to labor-cost increases.

One problem has always been, though, that the measuring sticks have been inadequate. One result has been that many attempts to gauge gains in productivity have had built-in upward bias. Railroads' movement away from the locomotive-and-car manufacturing business has been inadequately taken into account; and there is still too often an upward bias related to passenger-service activities.

Southern's Paul H. Banner proposes a new look at the way productivity is measured (p. 13). He also suggests that further research and analysis be carried out to take "the new look" still further. Both his basic premises and his followup ideas make a world of sense—though they could result in demolition of certain cherished assumptions in both boardroom and union headquarters. But, if cherished assumptions are in fact wrong—then let the wrecking-ball make a full swing.

Chicago transit: One quartet, four tunes

It was a scene made-to-order for a political cartoonist, and you could almost see the pen sketching-in the figures of the Chicago Regional Transit Authority String Quartet, featuring Mayor Daley and Illinois Gov. Walker on violin and the House speaker and the Senate president on viola and cello. As they played the works of four composers—simultaneously. Before a backdrop depicting the Second Chicago Fire—otherwise known as the going-up-in-smoke of a pretty reasonable network of urban mass transportation routes.

This was another so-called "summit" meeting of the key politicians backing or blocking (depending upon your viewpoint) creation of a Chicago-area RTA which would bring together the Chicago Transit Authority, the commuter railroads and surburban bus operators in a six-county area (RA, Aug. 13, p. 40). And it did produce a measure of agreement that, yes, RTA is a good idea. What it didn't produce was agreement on funding, on control, on cost. So, the state legislature headed into an autumn session, to begin Oct. 15, at which RTA might or might not be taken up, at which some solution to the worsening problems of CTA and the other carriers might or might not be achieved.

What eventually happens lies in the hands of four men—and if you believe what you read and hear, they're quite a quartet: The city boss who is still a ways from "last hurrah" stage; the governor who has eyes for the White House; the speaker who would like to be governor; and the Senate president, whose presumed ambitions have not been fully explored by the political experts.

Chicago has already experienced its share of fare increases and service cuts. More are coming, unless RTA gets there first. What else happens if there is no RTA? Quite possibly a real breakdown in urban mass transportation. And if that happens, they won't call Chicago the "second city" anymore. Try tenth, or twelfth, or twentieth, or. . .

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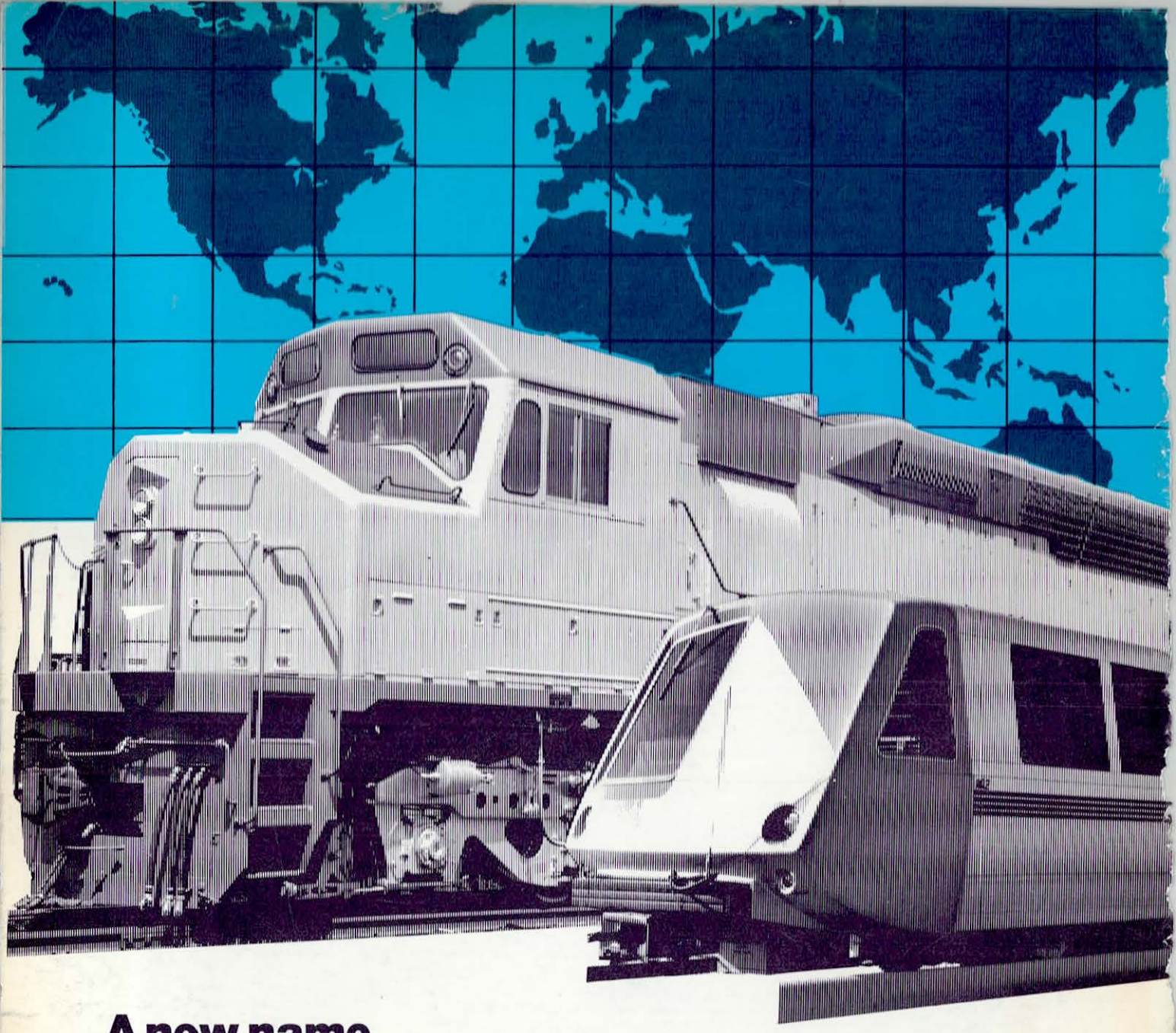

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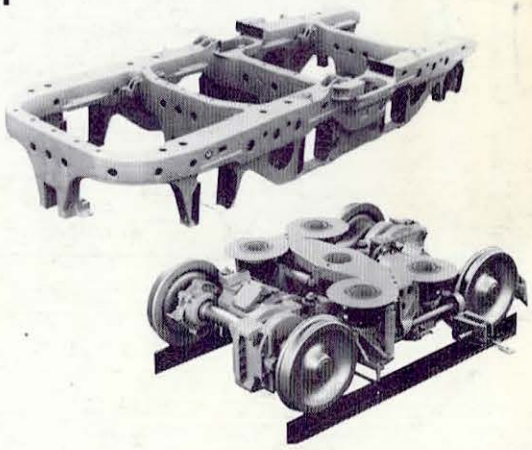

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